

AUDIO-VIDEO SURROUND RECEIVER
KR-V990D/V9080
 SERVICE MANUAL

KENWOOD

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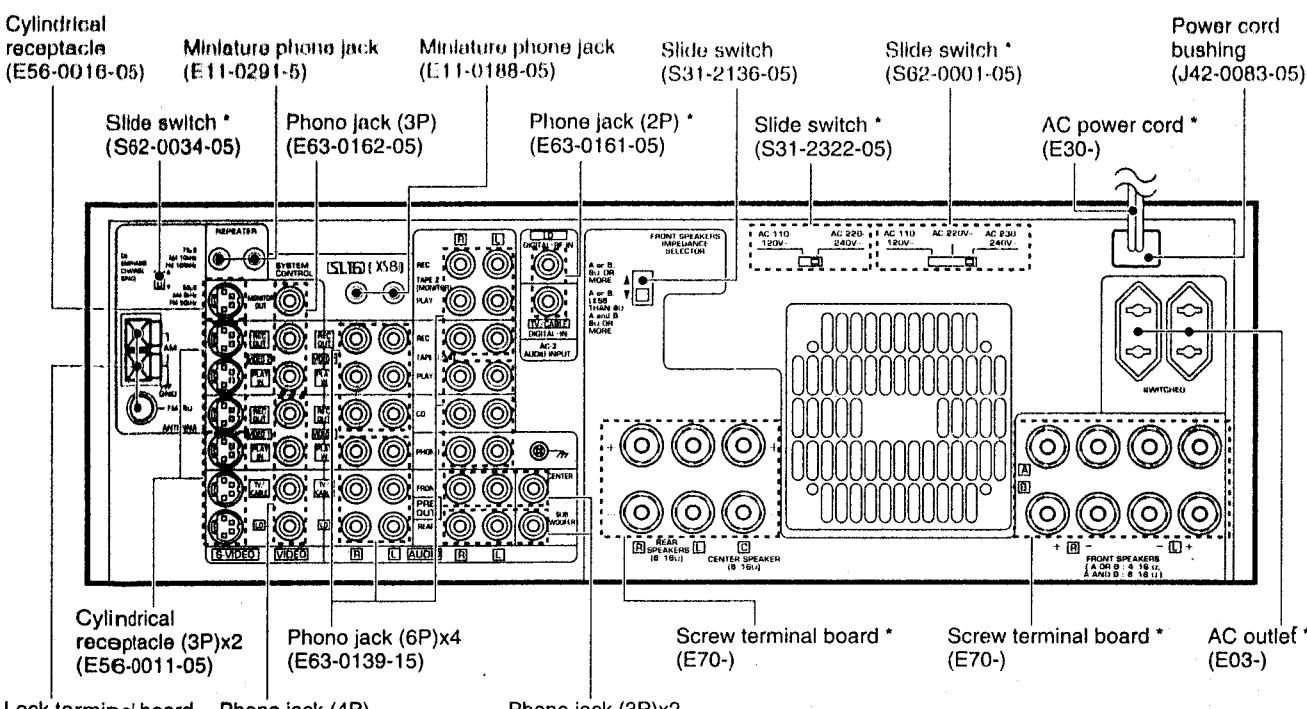
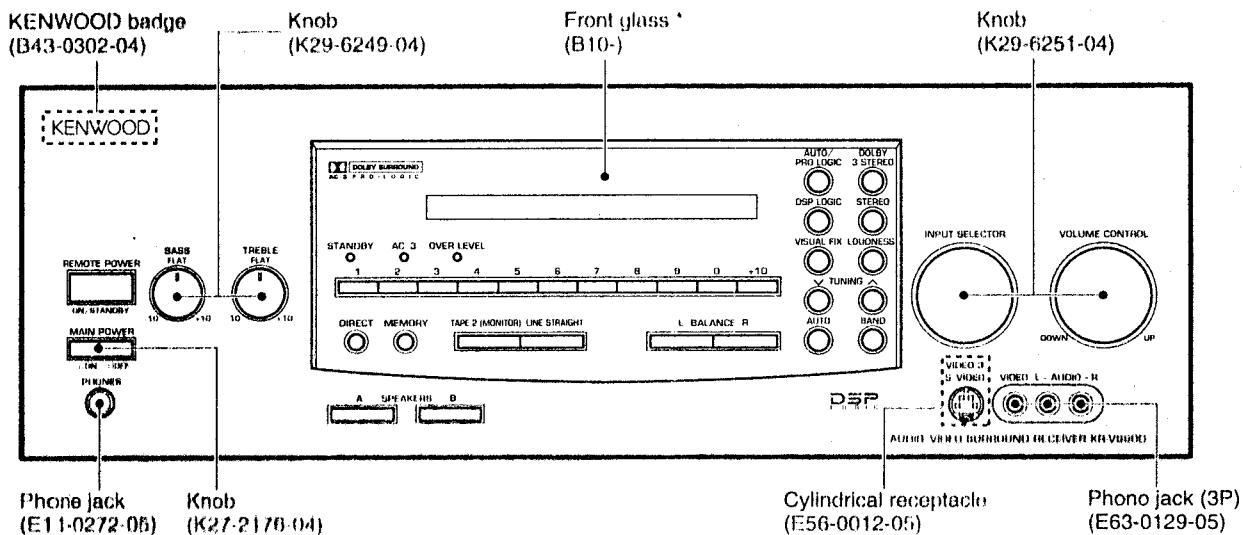


Illustration is KR-V990D.

* Refer to parts list on page 89.

PRECAUTIONS FOR REPAIR

- Can not use **JIG KSJ-0816** for the transmission frequency $455 \pm 2.2\text{kHz}$ of remote controller.
- For the serial test mode of the **CIRCUIT DESCRIPTION**, see Service Manual (**B51-5162-00**) of **KR-V7080/V8080**.

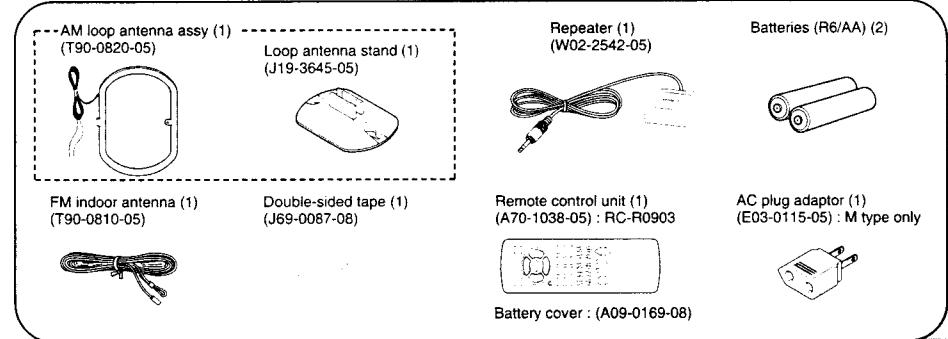
KR-V990D/V9080

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Accessories



SWITCHING FROM [XS8] TO [SL16]

You can easily change the system control mode with the following operation. Do this operation after completing all connections.

Switching to [SL16] : Hold down the AUTO key and switch the MAIN POWER key from OFF to ON.

Switching back to [XS8] : Hold down the BAND key and switch the MAIN POWER key from OFF to ON.

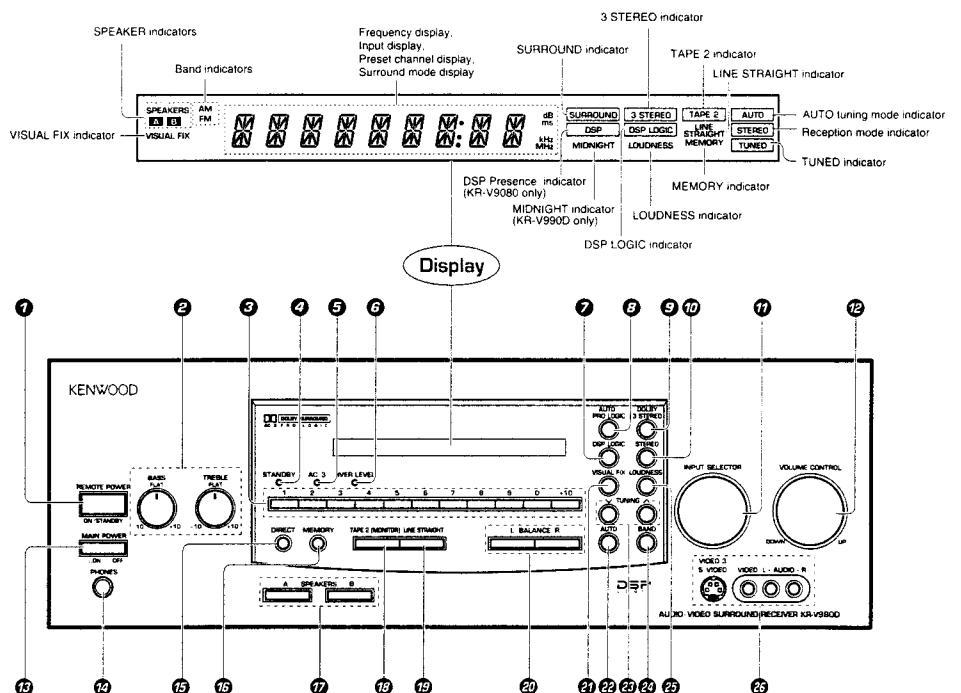
• This operation will not affect items stored in the memory.

Note : The system control mode will revert to [XS8] if the unit is not turned on for three consecutive days. If you would like to make the unit completely (and permanently) [SL16] compatible, please consult your nearest retailer or the Kenwood Marketing Department.

μ-COM (hard) match : Can be set 8pin of main μ-COM (UPD78058GC-XXX).

KR-V990D/V9080

CONTROLS



① REMOTE POWER key
Use to switch the power ON/STANDBY when the MAIN POWER is turned ON.

② Tone Control knobs
③ Numeric keys
④ STANDBY Indicator
⑤ AC-3 Indicator (KR-V990D only)
Lights when an AC-3 format signal is being played back.

⑥ OVER LEVEL indicator (KR-V990D only)
Lights when the level of the signal being input is too high.

⑦ DSP LOGIC key (KR-V990D)
DSP/DSP LOGIC key (KR-V9080)
Use to turn on, or switch, the DSP LOGIC mode.

⑧ AUTO/PRO LOGIC key (KR-V990D)
DOLBY PRO LOGIC key (KR-V9080)
Use to turn on, or switch, the DOLBY SURROUND mode.

REMOTE POWER switch STANDBY mode

When the receiver's power cord is plugged in to an AC outlet and the MAIN POWER key is turned ON, the STANDBY indicator will remain lit, regardless of the ON/STANDBY setting of the REMOTE POWER switch. This indicates that a small amount of current is being supplied to the receiver in order to back up the memory contents. This is called the Standby mode. When the standby indicator is lit, the receiver can be switched ON/STANDBY from the remote control.

⑨ DOLBY 3 STEREO key
Use to turn on the DOLBY 3 STEREO mode.

⑩ STEREO key
Use to cancel the surround mode.

⑪ INPUT SELECTOR knob
Use to select the input sources.

⑫ VOLUME CONTROL knob

⑬ MAIN POWER key
Use to turn the POWER ON/OFF.

⑭ PHONES jack
Use for headphone listening.

⑮ DIRECT key
Use to tune radio stations directly by numerical input.

⑯ MEMORY key
Use to store radio stations in the preset memory.

⑰ SPEAKERS A/B keys
Use to turn the speakers ON/OFF.

⑱ TAPE 2[MONITOR] key
Use to monitor a recording.

⑲ LINE STRAIGHT key
Use to listen with high quality sound.

⑳ BALANCE keys
Use to adjust the volume balance between left and right.

㉑ VISUAL FIX key
Use to lock on to the current video input.

㉒ AUTO key
Use to select the auto tuning mode.

㉓ TUNING keys
Use to tune in radio broadcasts.

㉔ BAND key
Use to select the broadcast band.

㉕ LOUDNESS key
Use to emphasize deep base sounds.

㉖ VIDEO-3 terminals

KR-V990D/V9080

REMOTE CONTROL OPERATION

The remote control unit provided with unit functions in the following two modes so that it can be used to control other KENWOOD system components as well as video components from other manufacturers.

KENWOOD component control mode This mode is used to control the KENWOOD source components including cassette decks and a CD player. (The controlled components must be connected to this unit through system control cords.)

Video component control mode This mode allows to control the basic operations of video components from KENWOOD as well as other manufacturers.

Some of the keys act in different ways depending on the modes described above. Therefore, be sure to adjust the required mode before pressing these keys.

MACRO 1, MACRO 2 keys
Use to operate several components automatically (MACRO PLAY).

In Graphical User Interface (GUI) mode, use to move the pointer.
In other modes, use to operate the various components.

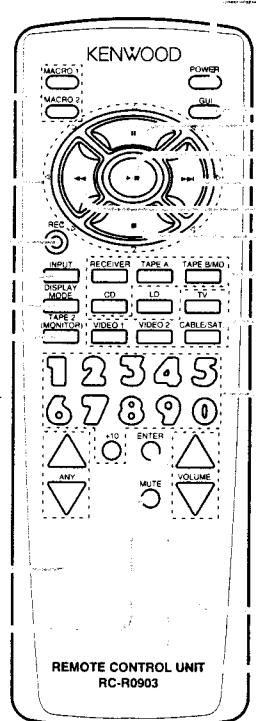
⑦

INPUT key
Use to select an input source.

DISPLAY MODE key
Use to switch the display mode.

⑧

TAPE 2(MONITOR) key
Use to monitor a recording.

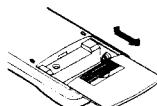


REMOTE CONTROL UNIT
RC-R0903

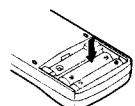
MODEL: RC-R0903
Infrared Ray System
Transmission frequency : $455 \pm 25\text{kHz}$

Loading batteries

① Remove the cover.

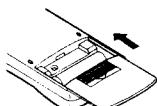


② Insert batteries.



* Insert two AA-size (R6 / SUM-3) batteries as indicated by the polarity markings.

③ Close the cover.



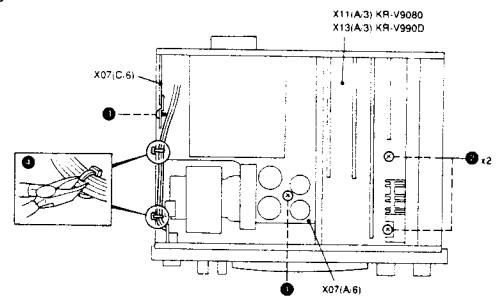
KR-V990D/V9080

DISASSEMBLY FOR REPAIR

1. How to remove the Power transistor

Illust. 1

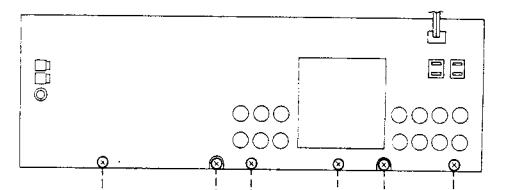
1. Remove the one screw ①, two screws ② and the one screw ③ on the Mounting hardware.
2. Cut the two Wire bands ④ with the Cutting nipper, etc.



Illust. 1

Illust. 2

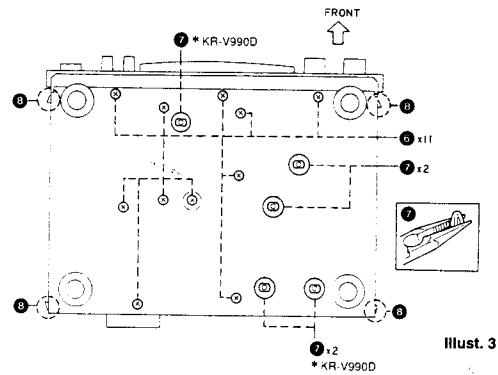
3. Remove the six screws ⑤ on the Rear panel.



Illust. 2

Illust. 3

4. Remove the eleven screws ⑥ at the bottom.
5. Remove the Unit holders ⑦ while pushing them with the Pliers, etc.
6. Remove the Bottom plate while pushing the four clicks ⑧.



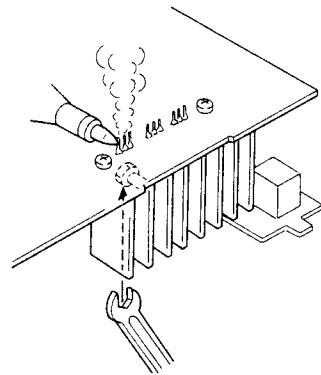
Illust. 3

KR-V990D/V9080

DISASSEMBLY FOR REPAIR

Illust. 4

7. Remove the Power transistors with the Soldering iron.
8. Remove the screws on the Power transistors with the Hexagon wrench.

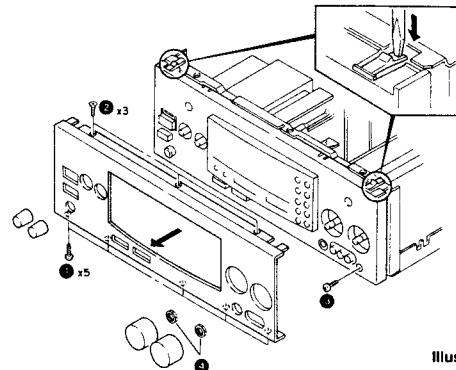


Illust. 4

2. How to remove the Display unit (X14-, A/6)

Illust. 5

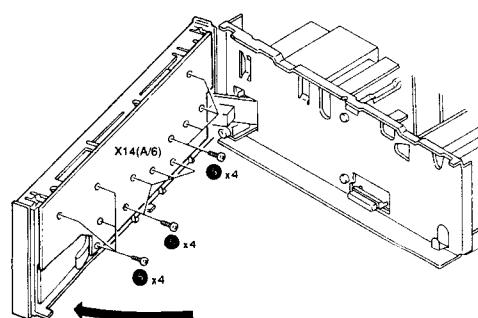
1. Remove the five screws ① at the bottom and the three screws ② at the top.
2. Remove the following Knobs; VOLUME CONTROL, INPUT SELECTOR, TREBLE, BASS.
3. Remove the Front panel while pushing the clicks.
4. Remove the one screw ③, then remove the Sub panel.



Illust. 5

Illust. 5 / Illust. 6

5. Remove the two Hexagon nuts ④, the twelve screws ⑤, then remove the Display unit (X14-, A/6).

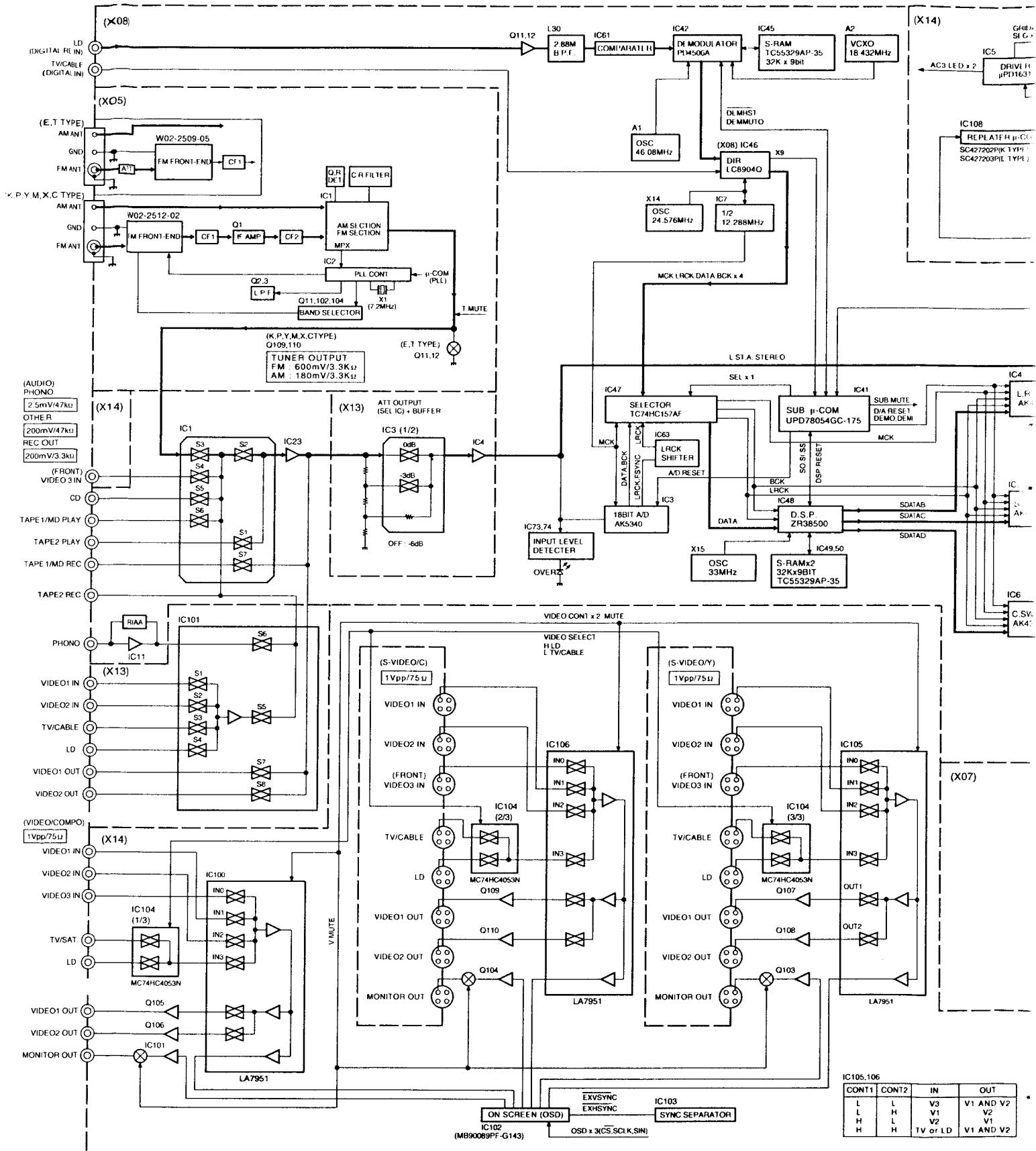


Illust. 6

KR-V990D/V9080

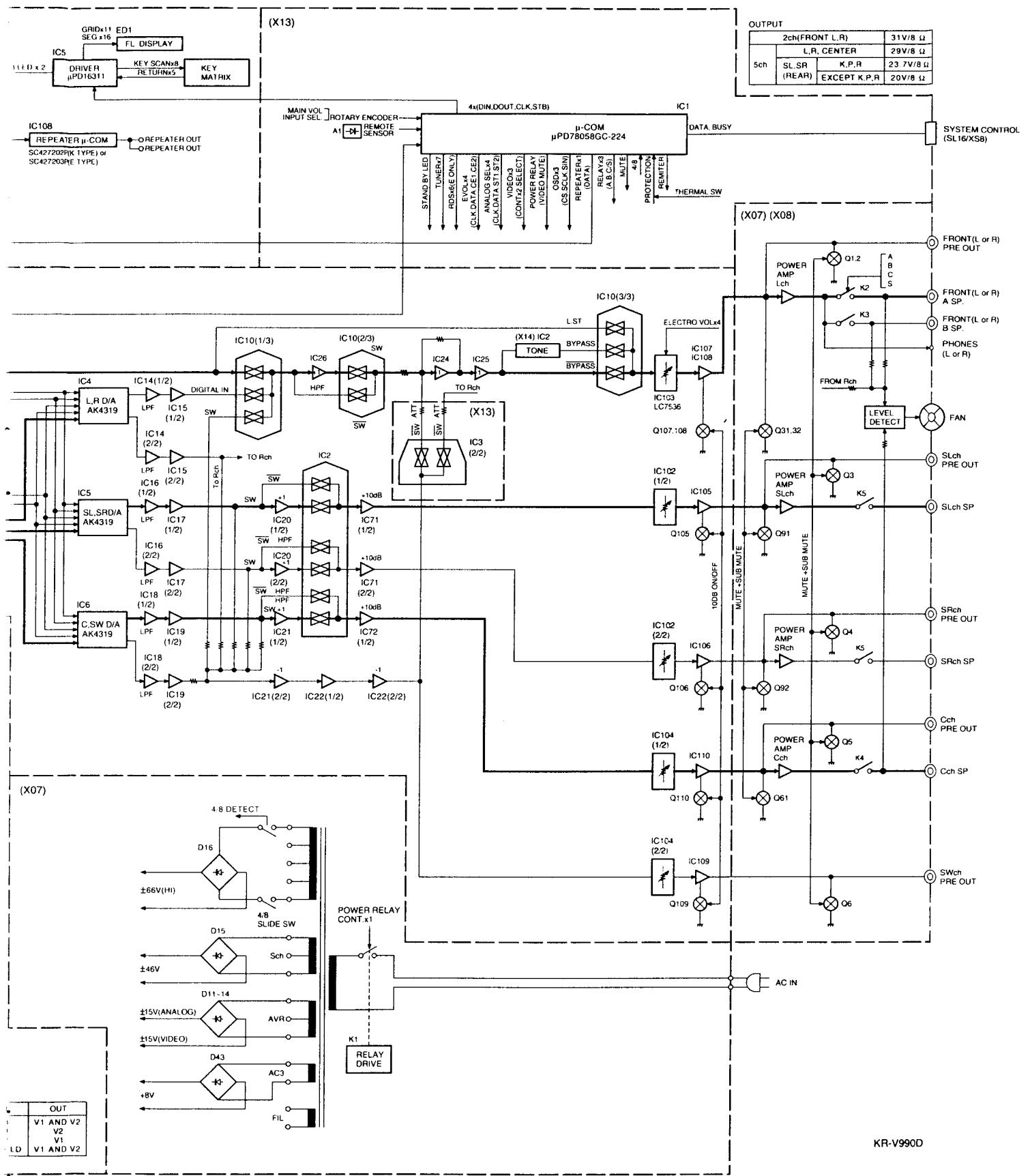
BLOCK DIAG

KR-V990D



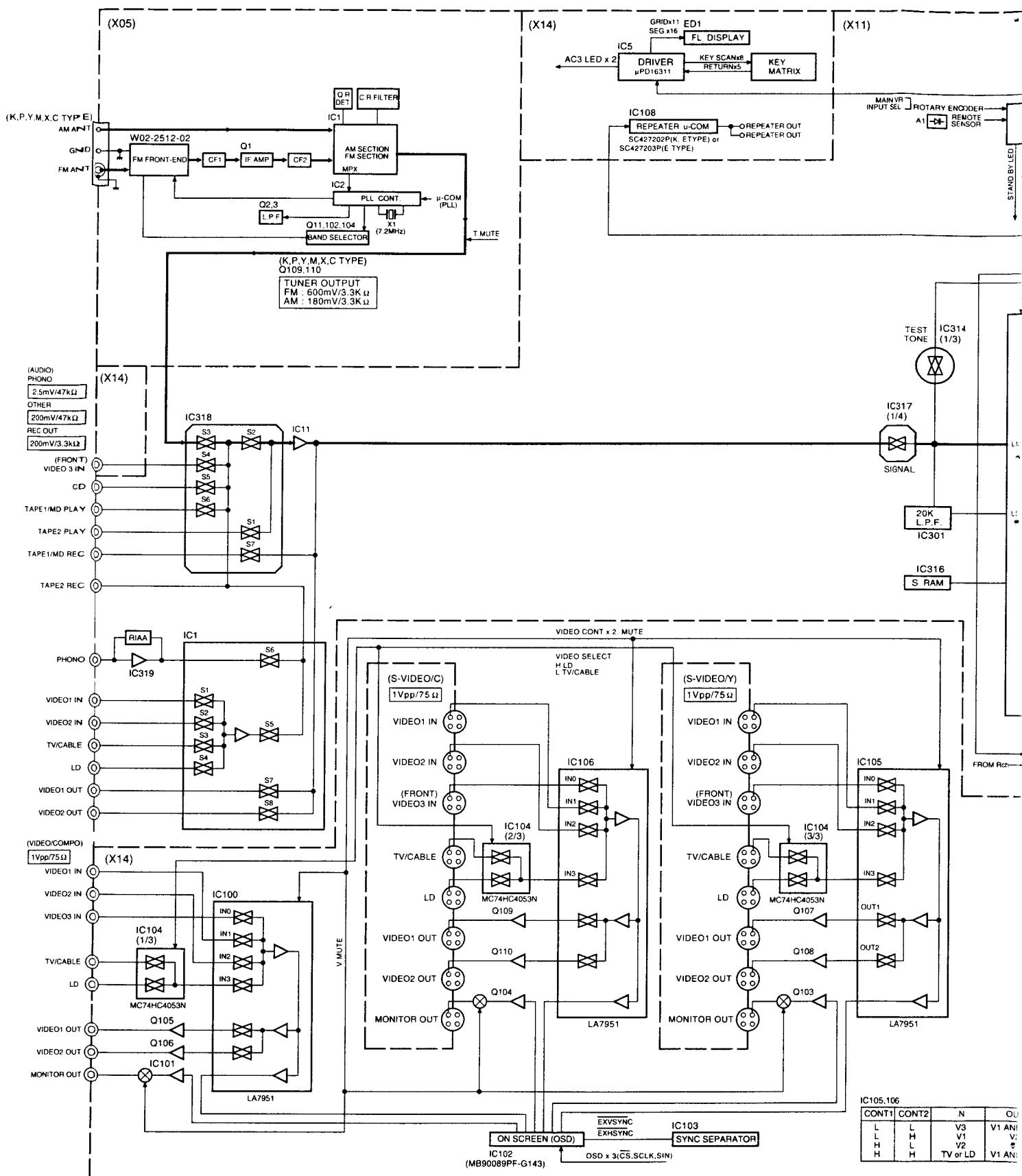
KR-V990D/V9080

DIAGRAM



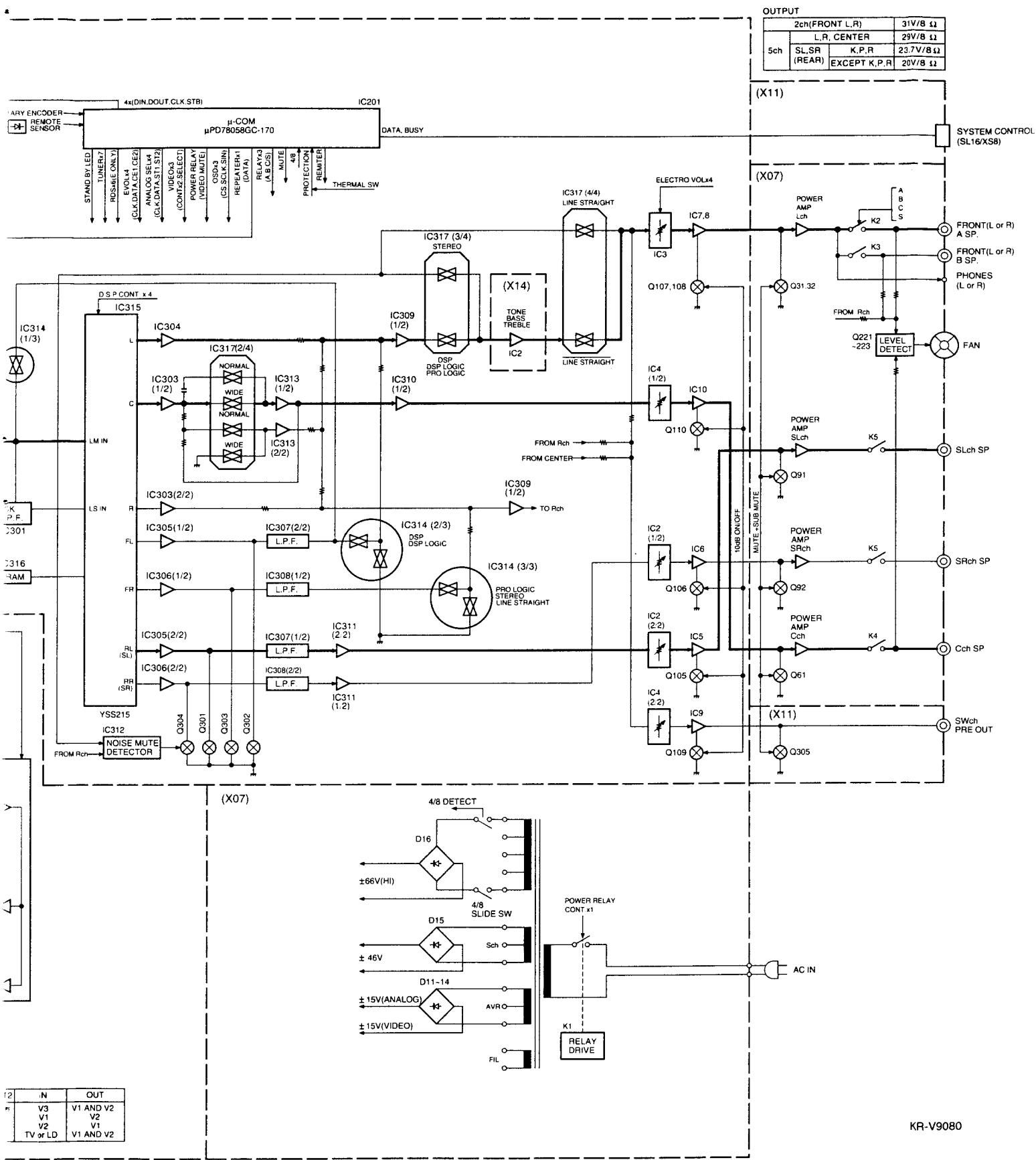
KR-V990D/V9080 BLOCK DIAGRAM

KR-V9O80



KR-V990D/V9080

Circuit Diagram



KR-V9080

CIRCUIT DESCRIPTION

1. Function

1-1. XS8/SL16 system changeover

Implements an additional operation by the system in order to shift a system operated by XS8 to SL16.

1-1-1. SL16

Easy operation one way amplifier and receiver. Other source devices are compatible with one-way and two-way easy operation. Operation is 16-bit. Operation is two way and compatible with operating mode display. Also, adding MD to input selector makes it compatible with easy operation. Apart from TUNER, source devices are operating mode display compatible and input selector MD compatible. Since it is not possible for the amplifier and receiver to be always compatible with operating mode displays, they are only input selector MD compatible and SL16 compatible.

1-1-2. Addition of a selector source

Adding a system operation adds selector sources MD and controls MD system operation.

(1) Selector source switching

MD are switched as TAPE1 background modes separately from the normal selector functions.

- Switch the selector source by holding down the AUTO panel key for at least two seconds.
TAPE1'MD
(If another key is entered while the key is being entered, the key input is set to off and the key is made ineffective.)
When a MD is used, the MD is connected to the RCA Pin of TAPE1.
- The operation of the system controls only the currently selected source and as no control whatsoever over the operation of the side which is not selected. For example, while MD is selected, even if the "Deck B Play" serial code is received, MD will remain selected without switching from MD to TAPE1..

(2) Settings during microprocessor backup or initialization

- During microprocessor initialization the selector is set to TAPE1. The current selector mode (TAPE1/MD) is maintained except when the backup is disrupted.

(3) Other items be noted

- This selector switching function has been developed in accordance with new serial codes. Therefore, if XS8 is used, since there is no code for MD, the selector source function will not work if the 8/16-bit serial mode is 8-bit. It words only in 16-bit mode. Also, if serial mode has been switched from 16-bit to 8-bit when MD are being selected, it will force a switch to TAPE1.

1-2. GUI (Graphic User Interface) function

This function enables the user to control each unit from the screen by combining the OSD-IC (On-Screen Display-IC) with a split (arrow on the screen) and the remote controller with a direction key that moves a split.

1-3. OSD (On Screen Display) display by new 16-bit serial communication

In a new 16-bit system, the current state of other models (CD deck, etc.) that communicate data in series can be displayed on the OSD screen.

1-4. Repeater function

This function enables the units (television, video, etc.) of other companies to be controlled using remote control code libraries and external remote control output units in the world that the UEI company (U.S.A.) has.

1-5. Macro play

This function enables the user to continuously output the preset remote control code. (Two channels)

1-6. Outline of AC-3 (KR-V990D)

1-6-1. Introduction

The sound in major motion pictures such as "Forest Gump" is recorded on film with AC-3, a highly efficient coding system developed by the Dolby Corporation called Dolby SR-D. To be precise, the sound on these movies is recorded on both a 4-channel Dolby optical track and a 5.1-channel Dolby SR-D digital track. Up to now, when a motion picture is recorded on video cassette, laser disc player, etc., the optically recorded 4-channel track has been matrix encoded to two channels and recorded on the video cassette or laser disc. On playback the channels were passed through a decoder called Pro Logic which restored the original four channels for surround playback.

KR-V990D/V9080

CIRCUIT DESCRIPTION



Figure 1 : Channel configuration

With AC-3, the 5.1-channel SR-D track is recorded to laser disc without change (actually the bit rate is slightly altered) and the AC-3 decoder restores the original 5.1-channels. The important factor here is that with AC-3, the original channel conditions are not changed by any transmission circuit. In other words, even with a directional booster circuit, the best inter-channel separation obtainable with Pro Logic was about 30 dB but with AC-3, the original separation can be reproduced without change. AC-3 is not only for motion pictures. It is scheduled to be available for use with the currently topical DVD (SD standard) and it is said that it can also be used with a variety of other media.

1-6-2. Comparison with Other Types

Table shows a comparison with the currently topical MD and DCC bit compression systems.

System	PASC	ATRAC	AC-3
Number of channels	2	2	$\leq 3+2+0.1$
Bit rate	384kbps	256kbps	384kbps
Processing Type	Sub-band	Transform	Transform
Application	DCC	MD	CATC/HDTV

Table 1 : High efficient digital audio coders for general use

AC-3 uses adaptive transform coding which is closer to MD's ATRAC than it is to the PASC used by digital compact cassettes. Even here, their greatest feature is that they are multi-channel based. That is to say, if we use appropriate words, it means that the bit allocation conforms to the number of channels. It means that if the source has two channels, compression in respect of those two channels is applied not independently but as if they were one channel. In other words, if at any time there is more information on one channel than on the other channel, more bits are allocated to the channel with more information and less bits to the other channel. In total, the bit rate is held at a certain fixed level. This is given by the number of source channels up to a maximum of 5.1-channels. This is called global bit allocation and the most important feature of AC-3. Despite AC-3 being multi-channel, this enables a low bit rate to be achieved, but if the signal conditions are such that processing at the prescribed bit rate is not possible, the high frequency component only is separated into an envelope component and a carrier component and the envelope data is coded with great accuracy. This is based on the psychological nature of sound perceived from the envelope derived from the signal itself, positioned at the high end of the human bearing system.

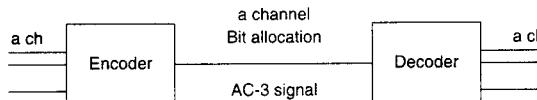


Figure 2 : Bit allocation complies with number of channels

1-6-3. AC-3 Performance

AC-3 is capable of compressed transmissions up to a maximum of 24 bits but at present most actual transmissions seem to be 16-bit compressed transmissions. No formal specifications have been released yet but the following representative specifications have been extracted from data issued by the Dolby Corporation.

KR-V990D/V9080

CIRCUIT DESCRIPTION

Frequency characteristics L, C, R, SI, Sr ch	: 20-20 kHz ± 0.5 dB (-3 dB : 3 Hz, 20.3 kHz)
LFE ch	: 20-120 Hz ± 0.5 dB (-3 dB : 3 Hz, 121 Hz)
THD	: 0.1% or less @ 1 kHz
Dynamic range	: 120 dB or more
Separation	: 90 dB or more
Sampling frequency	: 48, 44.1, 32 kHz
Quantification	: 16, 18, 20, 24 bits/sample
Bit rate	: 32 kbps ~ 640 kbps

1-6-4. AC-3 Features

AC-3 has a number of interesting features other than global bit allocation. These are shown below.

(1) Dynamic Range Control

People watching a movie at home late at night may wish to reduce the sound volume when there is an explosion scene, for instance. But they want a level at which they can listen to dialog. To satisfy these conflicting demands, AC-3 is equipped with two functions called dynamic range control and dialog normalization. These are joined by two modes, "Line-out mode" and "RF mode". The first has comparatively little compression and the extent to which it is applied is selectable by the user. The second applies strong compression and has no provision for user selection. Since it changes the gain setting, a gain shift of +11 dB occurs. Since AC-3 holds in its bit stream the information on the dB count of the dialog level when the signal was recorded, this information can also be used to adjust the electronic volume and set the playback level automatically.

(2) Output Configurations

It is stipulated that products which incorporate AC-3 decoders must have the following two configurations.

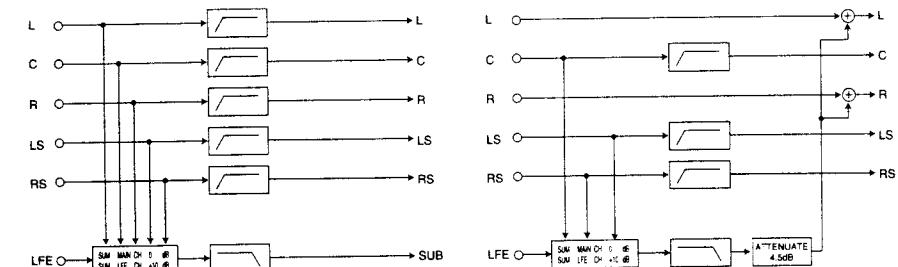


Figure 3 : Output configuration 1

Figure 4 : Output configuration 2

As we can see from Figures 3 and 4, it is not the low frequency effect (LFE) channel alone which is output to the sub-woofer. It is mixed with the low register components of the other channels and output to the sub-woofer. In effect, this LFE channel was conceived originally to supply independent bass sound from 70 mm movie film to a sub-woofer behind the screen. Consequently, base signals appear on the LFE channel only when there are earth-shaking base notes from scenes such as explosions or earthquakes. In effect, it can be considered to be a channel which serves to preserve the bass sounds. This channel is probably called a 0.1 channel because it handles only a band of low frequencies which seldom appear. In configuration 1, all the speakers are small and all contribute base sounds to a sub-woofer. Configuration 2 is a case where the left and right speakers are large, there is no sub-woofer, and the bass notes are handled by the channels with left and right type speakers. Other than these, a configuration 3 has been stipulated as an option in which the speakers other than the center speaker are large. (These output configurations have not been formalized. They are liable to be changed.)

(3) Down-Mixing

Concerning 5.1-channel audio, since not all users will use a 5.1-channel (that is a 6-channel) system for playback, it is extremely convenient to provide for 2-channel stereo or monaural playback. The AC-3 decoder system has a mode which is used when the system is being set up, to enter the number of speakers which the user has. In accordance with this information, the DSP automatically down-mixes the 5.1-channels into the channels which can be played back. Also, since normal tape output is 2-channel, this down-mixing is essential for outputting a 5.1-channel source. However, at the same

CIRCUIT DESCRIPTION

time, it is inconvenient for 5.1-channel playback. For this reason, the use of 2-channel analog input is recommended at such times. Therefore, when connecting the signal lead from the source device to a product which incorporates the AC-3 decoder, it is essential to have analog and digital cables as well as a RF cable which can transmit the AC-3 bit stream. Down-mixing is also required when listening to 5.1-channel sound through headphones but then it is not possible to have surround playback. This inconvenience would disappear if a DSP engine with the power to handle 5.1-channel playback and down-mixing at the same time could be achieved but this would require an extremely fast DSP IC. Figure 5 shows the configuration of a laser disc player. Existing laser discs have the same audio signal recorded on a 2-channel analog FM track and a digital track which has the same format as a 16-bit compact disc. An AC-3 compatible laser disc uses the right channel of the analog FM track to record the AC-3 bit stream signal. Therefore, when the analog track is played back, a buzzing noise is heard from the right channel. But nearly all laser disc players which are being sold now will select the digital track if one is present, do a DA conversion and send out the analog output, so there is no problem with hearing noise.

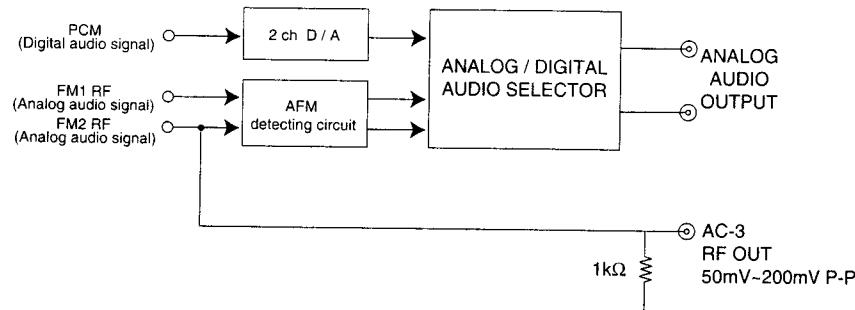


Figure 5 : Basic configuration of a laser disc player

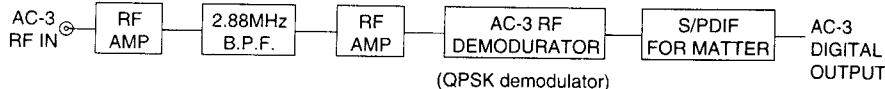


Figure 6 : Essential block for LD side

Since the AC-3 bit stream is designed to be mounted in the IEC-958 S/PDIF format, it should really be output as a bit stream in the digital output but the demodulator IC to do this is still expensive and, ostensibly to avoid high cost in LD players, it is output as a RF signal from the LD player. The RF output from the LD player will probably disappear when mass production makes this demodulator IC cheaper.

(4) Bit Stream Data

The AC-3 synchronization frame sequence is as shown in the diagram below.

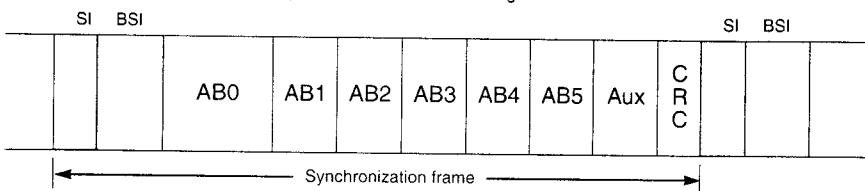


Figure 7 : AC-3 synchronization frame

CIRCUIT DESCRIPTION

Various data other than audio can enter into the BSI. Here we pick up and describe some characteristic features.

- Bit stream mode, the main service, has a three bit code to distinguish between quasi-services and test data or quasi-services, apart from dialog and commentaries, to notify those with impaired sight and hearing or to give warning of an emergency.
- Audio coding mode, a 3-bit code, contains code to identify the channel which a particular signal is occupying.
- Bit stream data can carry an 8-bit language code to identify the languages of 128 world countries. By looking at this data, it is possible to know which language is being used for that AC-3 signal. DVD (SD standard) allows up to 8 languages to be entered on a disc at the same time. However, playback is limited to one language at a time. Only one language may be entered at one time on a laser disc.
- 2-bit data giving the size of the mixing room which was used for final mixing.
- It is also possible to enter data to tell whether a bit stream is original or copied from another bit stream (a 1-bit code identifying whether a signal has been Dolby surround encoded).

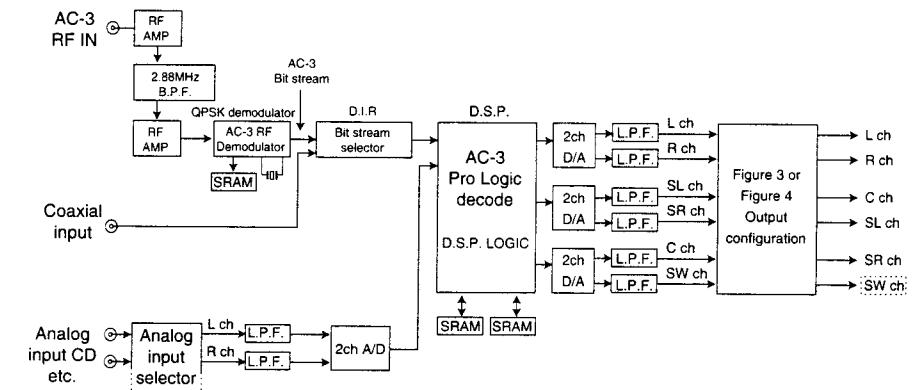


Figure 8 : KR-V990D AC-3 related block diagram

KR-V990D/V9080

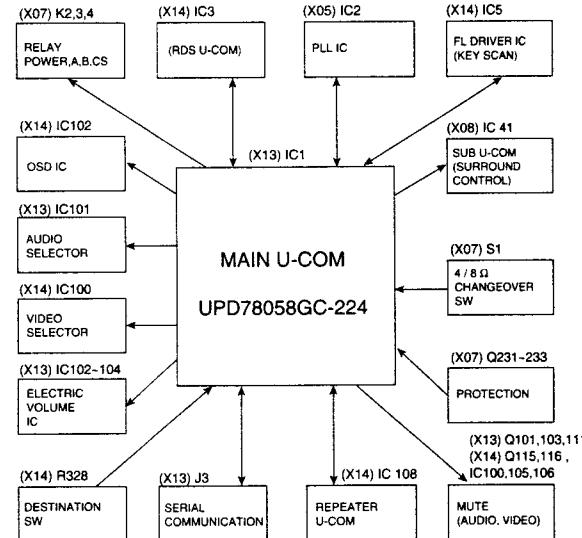
CIRCUIT DESCRIPTION

2. Main microprocessor KR-V990D: UPD78058GC-224(X13:IC1)

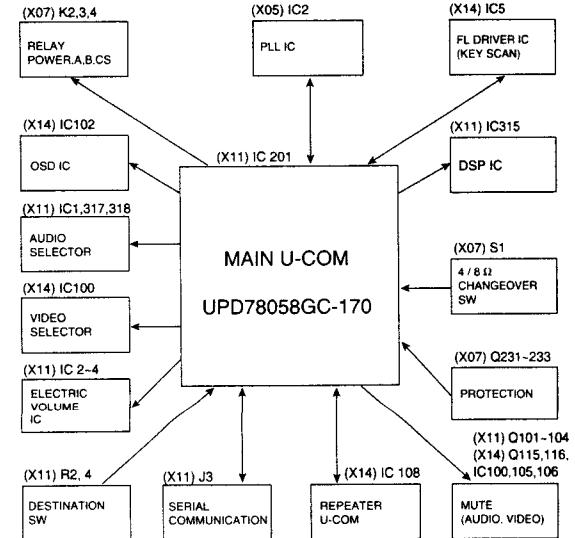
*KR-V9080: UPD78058GC-170(X11:IC201)

2-1. Microprocessor periphery block diagram

(KR-V990D)



(KR-V9080)



KR-V990D/V9080

CIRCUIT DESCRIPTION

2-2. Pin description

Pin No.	Name	I/O	Description
1	PROTECT	I	Protection input
2	4/8	I	4/8 changeover input
3	LIMITER	I	Limiter input
4	AVSS		A/D GND
5	SUB RELAY	O	+5V (sub u-com,DSP) relay control
*5			Unused
6	OSD CS	O	MB90089 CS
7	AVREF1		Unused
8	8/16	I	Serial XS8/SL16 Bit distinction
9	OSD SIN	O	MB90089 SIN
10	OSD SCLK	O	MB90089 SCLK
11	SUB SI	I	Control u-com communication SI
*11			Unused
12	SUB SO	O	Control u-cum communication SO
*12	YSS215 CD	O	YSS215 CD
13	SUB CLK	O	Control u-com communication CLK
*13	YSS215 BCK	O	YSS215 BCK
14	SUB REQ1	O	Control u-com communication REQ1
*14	YSS215 WCK	O	YSS215 WCK
15	SUB REQ2	I	Control u-com communication REQ2
*15	YSS215 IC	O	YSS215 IC
16	FL DOUT	I	UPD16311 DOUT (key scan input)
17	FL DIN	O	UPD16311 DIN (display data output)
18	FL CLK	O	UPD16311 clock
19	990D/9080	I	KR-V990D/V8090 changeover SW
20,21	SEL 2,1	I	Selector encoder input2,1
22,23	VOL 2,1	I	Volume encoder input2,1
24-26	TSW0-2	I	Destination changeover SW0,SW1(CH.SPACE),SW2
27	FL STB	O	UPD16311 strobe
28-30	9215 C-A	O	TC9215 C,B,A,
31,32	4035 B,A	O	TC4053 B,A
33	VSS		GND
34	SEL STB	O	NJU7311-7313 strobe
35	SEL DATA	O	NJU7311-7313 data
36	MUTE 10dB	O	±10dB mute
37	TSW3	I	Destination changeover SW3
*37			Unused
38	V SELECT	O	TA4053 video select
39			Unused
40	SEL CLK	O	NJU7311-7313 clock

CIRCUIT DESCRIPTION

Pin No.	Name	I/O	Description
41,42	VOL CE2,1	O	Electric volume CE2,CE1
43	VOL DATA	O	Electric volume data
44	VOL CLK	O	Electric volume clock
45	SBUSY	I/O	Serial busy
46	SDATA	I/O	Serial data
47	MUTE	O	Mute
48	REPEATER	O	Repeater output
49	SYNC DET	I	OSD video comparison signal detection
50	V MUTE	O	Video mute
51,52	V CONT 2,1	O	LA7951 video control 2,1
53	T MUTE	O	Tuner mute
54	PLL CLK	O	LC7218 clock
55	PLL DATA	O	LC7218 data
56	PLL CE	O	LC7218 CE
57	SD	I	SD input
58	STEREO	I	Stereo input
59	PLL DO	I	LC7218 DO
60	RESET	I	Reset
61	REMOCON	I	Remote control input
*62-66			Unused
62	RDS START	I	RDS start
63	RDS DATA	I	RDS data
64	RDS CLK	I	RDS clock
65	RDS ATT	O	RDS attenuator
66	RDS RST	O	RDS reset
67	CE	I	CE (backup)
68	VDD		Power supply (+5V)
69,70	X1,X2	I	Connected to system clock
71-73			Unused
74	AVSS		A/D analog power supply
75	AVREF0		A/D reference voltage input (+5V)
76	RDS SLEVEL	I	RDS signal level
77	RELAY POWER	O	Relay POWER control
78-80	RELAY A,B,CS	O	Relay Asp,Bsp,C/Ssp control

CIRCUIT DESCRIPTION

2-3. Initial state

POWER ON/OFF	: OFF
MAIN VOLUME LEVEL	: -65dB
L/R BALANCE	: CENTER
AUDIO INPUT SELECTOR	: TUNER
VIDEO INPUT SELECTOR	: VIDEO1
SPEAKER A	: ON
SPEAKER B	: OFF
TAPE2 / MONITOR	: OFF
LINE STRAIGHT	: OFF
DIMMER	: DIMMER 1
VISUAL FIX	: OFF
OSD DISPLAY MODE	: OFF
FL DISPLAY MODE	: INPUT SELECTOR
SURROUND MODE	: STEREO
CENTER SPEAKER	: ON
REAR SPEAKER	: ON
SUB WOOFER (KR-V990D)	: OFF
SUB WOOFER (KR-V9080)	: ON

• TEST PRESET FREQUENCY

Channel	BAND	K1 TYPE	BAND	K2 TYPE	BAND	E TYPE
01ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
02ch	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz
03ch	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz
04ch	AM	630kHz	AM	630kHz	AM	630kHz
05ch	AM	1000kHz	AM	1000kHz	AM	999kHz
06ch	AM	1440kHz	AM	1440kHz	AM	1440kHz
07ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
08ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
09ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
10ch	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz
11ch	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz
12ch	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz
13ch	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz
14ch	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz
15ch	AM	530kHz	AM	530kHz	AM	531kHz
16ch	AM	990kHz	AM	990kHz	AM	990kHz
17ch	AM	1700kHz	AM	1610kHz	AM	1602kHz
18ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
19ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
20ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz

The initial setting is performed in a following event:

1. When backup memory data is destroyed when reset is applied to the microprocessor.
2. When the power cord is plugged in to the AC wall outlet while pressing the POWER key.

2-4. Contents of backup data to be held

POWER ON/OFF	: AUTO
MAIN VOLUME LEVEL	: TEST PRESET FREQUENCY
L/R BALANCE	: FM
AUDIO INPUT SELECTOR	: CH SPACE 9K 531 kHz
VIDEO INPUT SELECTOR	: CH SPACE 10K 530 kHz
P. CH DISPLAY	: [- - ch]
PTY SELECT MODE	: OFF
PTY SEARCH MODE	: OFF
RDS DISPLAY MODE	: FREQUENCY DISPLAY
TA / NEWS / INFO.	: OFF
SYSTEM CONTROL	: XS8

SPEAKER A ON/OFF
SPEAKER B ON/OFF
TAPE2/MONITOR ON/OFF
LINE STRAIGHT ON/OFF
DIMMER MODE
VISUAL FIX ON/OFF

DISPLAY MODE
SURROUND MODE
CH. LEVEL
SPEAKER SETTING

INPUT LEVEL

KR-V990D/V9080

CIRCUIT DESCRIPTION

TUNING MODE
PRESET MEMORY 1~40ch
LAST BAND
LAST CHANNEL
LAST FM FREQUENCY
LAST FM CHANNEL
LAST AM FREQUENCY
LAST AM CHANNEL

2-5. Destination and model list

MODEL		KR-V990D	KR-V9080	
Function		Destination	K P M X Y E T	K P M X Y
AMP	DSP	○○○○○○○○	○○○○○	
AMP	AC-3	○○○○○○○○	X X X X X	
TUNER	K1	X ○ X X X X X	X ○ X X X	
	K2	○○○ X ○ X X	○○○ X ○	
	E1	X X ○○○○○○	X X ○○○	
	E3 (RDS)	X X X X ○○○	X X X X X	

○ : YES X : NO

2-6. Destination list of tuner

Destination	BAND	Receive frequency range	channel space	iF	PLL reference frequency	destination TSW(X13- or X11-)				
						TSW2	TSW1	TSW0		
K1	FM	87.5MHz ~ 108.0 MHz	100kHz	10.7MHz	50kHz	0	1	0		
	AM	530kHz ~ 1700kHz	10kHz	450kHz	10kHz					
K2	FM	87.5MHz ~ 108.0MHz	100kHz	10.7MHz	50kHz	*1				
	AM	530kHz ~ 1610kHz	10kHz	450kHz	10kHz					
E1	FM	87.5MHz ~ 108.0MHz	50kHz	10.7MHz	50kHz	0	0	1		
	AM	531kHz ~ 1602kHz	9kHz	450kHz	9kHz					
E3	FM	87.5MHz ~ 108.0MHz	50kHz	10.7MHz	50kHz	1	1	1		
	AM	531kHz ~ 1602kHz	9kHz	450kHz	9kHz					

*1 Set as K2 for except when the data for destination description is K1, E1, and E3.

(0 : PORT PULL DOWN
1 : PORT PULL UP)

※ ATTENTION

The RDS PTY AF search always corresponds to a span search of 50kHz.

2-7. Key matrix

No. of ○ : (X14) IC5 Port No.

	⑩ KR1	⑪ KR2	⑫ KR3	⑬ KR4
⑯ KS1	DOLBY SURROUND	DSP LOGIC	DOLBY 3 STEREO	-
⑯ KS2	-	VISUAL FIX	LOUDNESS	STEREO
⑯ KS3	BAND	DOWN	AUTO	UP
⑯ KS4	+10	9	0	BALANCE R
⑯ KS5	7	6	BALANCE L	8
⑯ KS6	5	4	TAPE2	LINE STRAIGHT
⑯ KS7	DISPLAY	PTY	TA / NEWS / INFO.	-
⑯ KS8	3	2	MEMORY	SPEAKER B
⑯ KS9	DIRECT	1	SPEAKER A	POWER

2-8. KR-V990D Switching port control table

(1) AUDIO SELECTOR

	NJU7311AL (X08 : IC1)												NJU7313AL (X13 : IC 101)																
	② 27	③ 26	⑤ 24	⑥ 23	⑧ 21	⑨ 20	⑪ 18	② 27	③ 26	④ 25	⑤ 24	⑦ 22	⑧ 21	⑩ 19	⑪ 18	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7
TUNER	0	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1			
PHONO	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1			
CD	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
TAPE1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
VIDEO1	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1			
VIDEO2	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0			
VIDEO3	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
LD	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	1			
TV /CABLE	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	1	1	1			
TUNER	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
PHONO	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1			
CD	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
TAPE1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
VIDEO1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1			
VIDEO2	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1			
VIDEO3	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
LD	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1			
TV /CABLE	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	1			

(0 : OFF, 1 : ON)

(2) VIDEO SELECTOR

LA7951 (X14:IC105,106)		MC74HC4053N		
⑯ 13	⑯ 9	(X14 : IC104)		
CONT1	CONT2	A	B	C
VIDEO1	L	H	*	*
VIDEO2	H	L	*	*
VIDEO3	L	L	*	*
LD	H	H	L	L
TV/CABLE	H	H	H	H

(3) INPUT LEVEL CHANGEOVER

TC9215P (X13 : IC3)	
⑯ 12	⑯ 2
A	C
INPUT LEVEL ATT 0dB	L
INPUT LEVEL ATT -3dB	H
INPUT LEVEL ATT -6dB	L

*Don't care

KR-V990D/V9080

CIRCUIT DESCRIPTION

2-9. KR-V9080 Switching port control table

(1) AUDIO SELECTOR

	NJU7312AL (X11 : IC318)								NJU7313AL (X11 : IC1)																							
	2	27	3	26	4	25	6	23	7	22	8	21	10	19	11	18	2	27	3	26	4	25	5	24	7	22	8	21	10	19	11	18
	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8	L1R1	L2R2	L3R3	L4R4	L5R5	L6R6	L7R7	L8R8								
TAPE 2 OFF	TUNER	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1	0	1	1	0	1	1	1		
	PHONO	0	0	1	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	0	1	1	0	1	1	1		
	CD	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	1	0	1	1	0	1	1	0	1	1	1	
	TAPE1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	1	1	0	1	1	1		
	VIDEO1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	1	1		
	VIDEO2	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	1	0	0	1	0	1	0		
	VIDEO3	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	0	1	1	0	1	1	1			
	LD	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	1	0	1	1	1	0	1	1	1				
TAPE 2 ON	TUNER	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1		
	PHONO	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1	
	CD	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	1	1	1		
	TAPE1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	0	1	1	
	VIDEO1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1				
	VIDEO2	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	1	1	0	1	0			
	VIDEO3	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1					
	LD	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1						
	TV/CABLE	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	1	1	1						

(2) VIDEO SELECTOR

	LA7951 (X14 : IC105,106)		MC74HC4053N (X14 : IC104)		
	13	9	11	10	9
	CONT1	CONT2	A	B	C
VIDEO1	L	H	*	*	*
VIDEO2	H	L	*	*	*
VIDEO3	L	L	*	*	*
LD	H	H	L	L	L
TV/CABLE	H	H	H	H	H

* Don't care

(4) TEST TONE CHANGEOVER

	NJU7311AL (X11 : IC317)	TC9215P (X11 : IC314)
	11 18	5
TEST TONE ON	0	H
TEST TONE OFF	1	L

(5) SURROUND CHANGEOVER

	NJU7311AL (X11 : IC317)				TC9215P (X11 : IC314)
	2	27	3	26	8 21 9 20
	L1R1	L2R2	L3R3	L4R4	L5R5 L6R6 12
STEREO	0	1	1	0	H
AUTO (WIDE)	0	1	0	1	H
AUTO (Except for WIDE)	1	0	0	1	H
PRO LOGIC (WIDE)	0	1	0	1	H
PRO LOGIC (Except for WIDE)	1	0	0	1	H
3 STEREO (WIDE)	0	1	0	1	H
3 STEREO (Except for WIDE)	1	0	0	1	H
DSP/DSP LOGIC	0	1	0	1	L

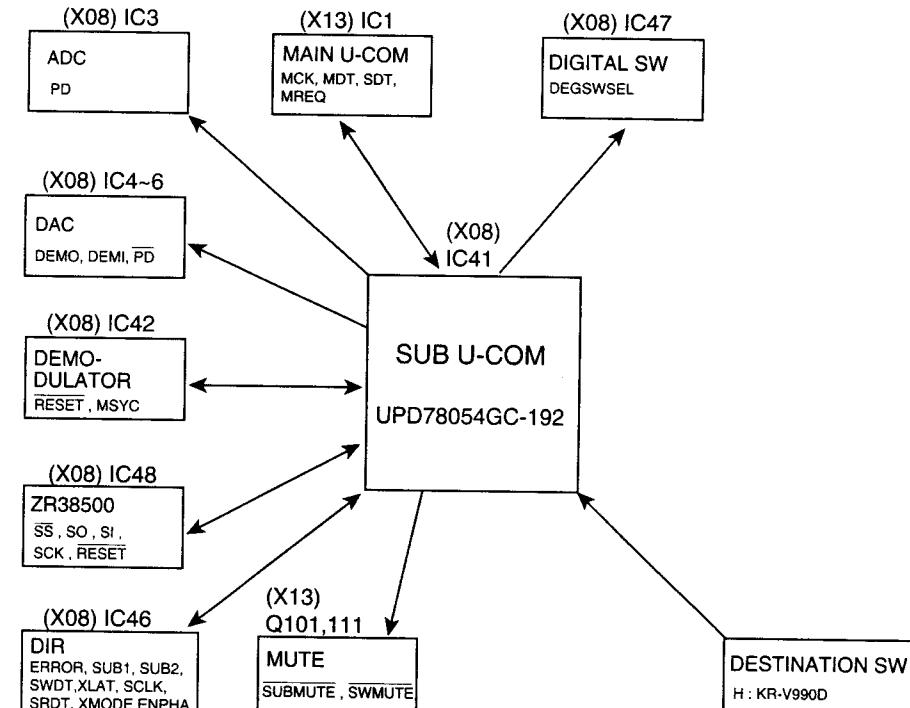
(0 : OFF, 1 : ON)

KR-V990D/V9080

CIRCUIT DESCRIPTION

3. Sub microprocessor : UPD78054GC-192 (X08 : IC41) : KR-V990D only

3-1. Microprocessor periphery block diagram



KR-V990D/V9080

CIRCUIT DESCRIPTION

3-2. Pin description

Pin No.	Name	I/O	Description	
1-3			Unused	
4	AVSS		A/D reference voltage (GND)	
5,6		O	Unused	
7	AVREF1		A/D reference voltage (VDD)	
8-10			Unused	
11	MDT	I	Master data (communicated with main u-com)	
12	SDT	O	Slave data (communicated with main u-com)	
13	MCK	I	Master clock (communicated with main u-com)	
14	MREQ	I	Master request (communicated with main u-com)	
15	SREQ	O	Slave request (communicated with main u-com)	
16	ZRSI	I	ZR38500 slave data	
17	ZRSO	O	ZR38500 master data	
18	ZRCK	O	ZR38500 master clock	
19	ZRSS	O	ZR38500 strobe	
20	ZRRST	O	ZR38500 reset	
21	ADPD	O	ADC AK 5340 power down	
22,23	DADEMO0,1	O	DAC PCM1702/AK4319 sample rate select	
24	DAPD	O	DAC PCM1702/AK4319 reset	
25	DEMFRST	O	Demodulator reset	
26		I	Unused	
27	DEMMSYC	I	Demodulator AC3 data sync check	L: AC3 SYNCRO H: ERROR
28-31		I	Unused	
32	PLL MUTE	I	PLL lock/unlock detect	
33	VSS	I	GND	
34	SUBMUTE	O	Sub mute	
35	SWMUTE	O	SW.mute (controlled with TEST TONE)	
36-40		I	Unused	
41	DIRSRDT	I	DIR LC8904Q channel status output (32BIT)	
42	DIRSCLK	O	DIR LC8904Q clock	
43	DIRXLAT	O	DIR LC8904Q data latch	
44	DIRSWDT	O	DIR LC8904Q data	
45,46	DIRSUB1,2	I	DIR LC8904Q sampling frequency output	
47	DIRERROR	I	DIR LC8904Q error check	L: PCM H: ERROR
48	DIRXMODE	O	DIR LC8904Q reset	
49	DIRENPH	I	DIR LC8904Q emphasis	
50-54			Unused	
55	DEGSWSEL	O	TC74HC157 analog/digital select	L: ANALOG H: DIGITAL
56,57			Unused	
58	TYPESEL	I	Model distinction	L: KR-V990D
59		I	Unused	
60	RESET	I	Sub u-com reset	
61-67		I	Unused	
68	VDD		Power supply (+5V)	
69-70	X2,X1		4.19MHz ceramics	
71	IC(VPP)		GND	
72-80			Unused	

KR-V990D/V9080

CIRCUIT DESCRIPTION

4. Test mode

4-1. Test mode of main unit

(1) Setting the test mode

The main unit is put into the test mode when the AC power is turned ON while pressing the "TUNING DOWN" key. The following state is obtained when the test mode of the main unit is set.

- The power is turned ON automatically.
- All the fluorescent display indicators and LEDs light. (The all-illuminated state is cleared by pressing any main unit key.)
- The backup state except when the power is turned ON and OFF is initialized.

(2) Canceling the test mode

Turn OFF the AC power.

(3) Tuner functions

- Preset channel call function
 - 1) Calls channels 1 to 9 (keys 1 to 9) and channel 10 (key 0) when the +10 key is not operated.
 - 2) Calls channels 11 to 19 (keys 1 to 9) and channel 20 (key 0) when the +10 key is operated once.
 - 3) Calls channels 21 to 29 (keys 1 to 9) and channel 30 (key 0) when the +10 key is operated two times and calls channels 31 to 39 (keys 1 to 9) and channel 40 (key 0) when the +10 key is operated three times.
- 4) Shifts to the operation obtained when the +10 key is not operated if it is operated four times.

- S level hexadecimal data display function (E, T type)

With the selector on TUNER, when the "AUTO/DOLBY PRO LOGIC" or "DOLBY PRO LOGIC" key on the main unit is operated, the frequency display ceases and the S level is displayed in hexadecimal while the key is pressed.

When "3 STEREO" is operated, the display is switched to restore the normal display.

• MUTE signal output

The tuner MUTE signal is set to OFF at all times and is not controlled at all.

• RDS display mode

Pressing the "DSP LOGIC" key enables the RDS display operation irrespective of the tuned operation.

To return to the normal display, press any key of the main unit.

• Repeater (IR remote control) pin check mode

Pressing the "BAL-L" key enables the POWER ON remote control code of an LD (KENWOOD) to be output from the repeater pin. Message "LD ON" is then displayed on the fluorescent indicator tube.

To return to the normal display, press any key of the main unit.

• E2PROM check mode

Pressing the "BAL-R" key enables data to be written in E2PROM. If the data read from the area in which data

was written is the same as the written data, the operation is proper. If it is different from the written data, message "NG" is displayed on the fluorescent indicator tube.

To return to the normal display, press any key of the main unit.

• Total go-off function

Pressing the "MEMORY" key enables the total go-off operation and normal lighting operation to be performed cyclically.

• Dimmer operation function

Pressing the "VISUAL FIX" key enables the dimmer operation. After that, the cyclic operation that cancels the dimmer operation is performed when the "VISUAL FIX" key is pressed.

• RDS attenuator (E, T type)

With the selector on TUNER, when the "SP A" key on the main unit is operated, the "SP A" display is erased and ATT is on. If the "SP A" on the main unit is operated again after that, "SP A" is displayed and ATT is switched off. The SP A operation and ATT operation work together and are combined with switching the ATT display on and off.

The ATT operation is done from ATT off.

If SP A was turned off with the selector on something other than TUNER, it will come on when TUNER is selected.

(4) AMP function

The original function of each key is executed when the SELECTOR mode is set to TUNER. The test mode operation is not performed in this case.

- One touch max, mid, min setting for Main VOL. input level, Speaker distance and Speaker level. If the selector is on something other than TUNER, max, mid, min settings can be made with the operation rotary encoder and the number keys. (All channel working mode)

(a) Max is number key "3".

(b) Mid is number key "2".

(c) Min is number key "1".

- One touch setting for Main VOL. input level, Speaker distance and Speaker level items. The items of 1) can be specified with respective keys and, if the selector is on something other than the TUNER, direct settings can be made with the number keys. (Initial state is Main VOL.)

(a) Input level is number key "4" + key of 1) :L

(b) Speaker distance is number key "5" + key of 1) : SD

(c) Speaker level FRONT L is number key "6" + key of 1) : IL

(d) Speaker level FRONT R is number key "7" + key of 1) : FR

(e) Speaker level CENTER is number key "8" + key of 1) : C

KR-V990D/V9080

CIRCUIT DESCRIPTION

(f) Speaker level REAR L is number key "9" + key of 1) : SL

(g) Speaker level REAR R is number key "0" + key of 1) : SR

(h) Speaker level Sub woofer is number key "+10" + key of 1) : SW

• Mute operation

Pressing the "AUTO" key enables the mute operation. After that, the cyclic operation that cancels the mute operation is performed when the "AUTO" key is pressed.

• Midnight operation function

Pressing the "TUNING UP" key enables the midnight operation. After that, the cyclic operation that cancels the midnight operation is performed when the "TUNING UP" key is pressed.

• Dolby surround center mode function

Pressing the "TUNING DOWN" key enables the Dolby surround key to be cyclically changed in the order of normal 'phantom' normal'

• Balance L and R setting in a one-touch motion

Pressing the "BAL-L" key enables the unit to enter the L-channel balance MAX state. After that, the balance center state is returned when the "BAL-L" key is pressed. The cyclic operation is then performed.

Pressing the "BAL-R" key enables the unit to enter the R-channel balance MAX state. After that, the balance center state is returned when the "BAL-R" key is pressed. The cyclic operation is then performed.

• Unconditional AC-3 digital input function (KR-V990D)

This function is used when the AC-3 digital signal based on the DAT source is received. Pressing the "BAND" key enables the unit to enter the unconditional AC-3 digital input state. The "TUNED" lamp on the fluorescent indicator tube then lights. To return to the normal state, press the "BAND" key.

• Sub-woofer SP ON/OFF setting

The sub-woofer ON/OFF operation is set by the cyclic operation every time the "MEMORY" key is pressed.

The "SPEAKERS" display on the fluorescent indicator tube disappears when the switch is turned off.

• TEST TONE operation

Uses the "DIRECT" key instead of the "TEST TONE" key.

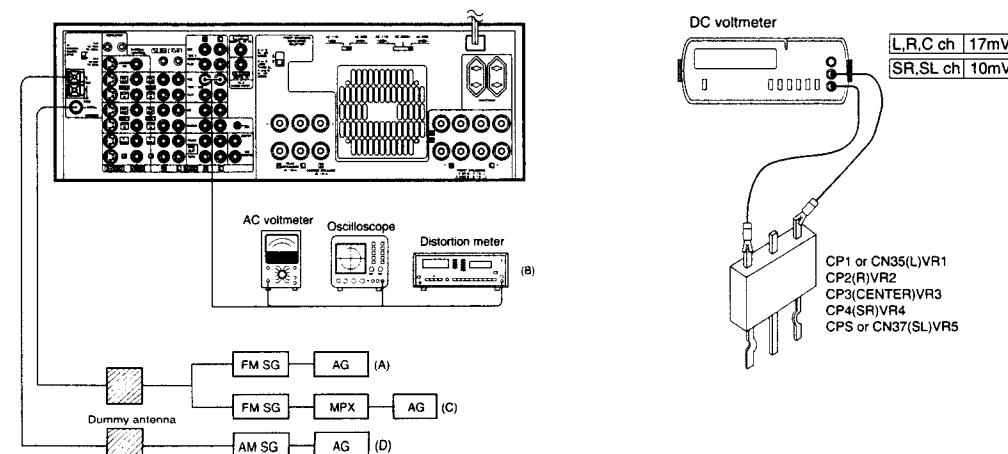
KR-V990D/V9080

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (E,T type) SELECTOR : FM							
1	DISCRIMINATOR	(A) 98.0MHz 1kHz, ±40kHz dev. (E,T type) 60dB μ (ANT input)	Connect a DC voltmeter between TP3 and TP4 (X05-)	AUTO or MONO 98.0MHz	1.3 (X05-)	0V	(a)
AUDIO SECTION							
<1>	IDLE CURRENT	—	(E) Connect a DC voltmeter across CP1 or CN35(L) CP2(R) CP3(CENTER) CP4(SR) CP5 or CN37(SL) (X07-)	Volume:0	VR1(L) VR2(R) VR3(CENTER) VR4(SR) VR5(SL) (X07-)	(L,R,CENTER) 17mv (SR,SL) 10mv	(b)
<2>	ON SCREEN Color burst frequency	—	Connect a frequency counter between port 10 (check round of HSYNC) of IC102 and GND (X14-)	After power ON, connect port 21 (check round of TEST) of IC102 and GND (X14-)	TC1 (X14-)	3.57954MHz ±25Hz	

(a)

(b)



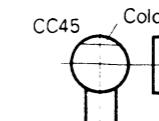
KR-V990D/V9080

PARTS DESCRIPTIONS

CAPACITORS

CC 45 TH 1H 220 J

1 = Type ... ceramic, electrolytic, etc. 4 = Voltage rating
 2 = Shape ... round, square, ect. 5 = Value
 3 = Temp. coefficient 6 = Tolerance



• Capacitor value

010 = 1pF	2	2	0 = 22pF
100 = 10pF			
101 = 100pF			
102 = 1000pF = 0.001μF			
103 = 0.01μF			

Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60 ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10μF - 10 ~ +50
							-20	-20	-0	Less than 4.7μF - 10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word	A	B	C	D	E	F	G	H	J	K	V
1st word											
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J

1 2 3 4 5 6 7

Refer to the table above.

(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z

1 2 3 4 5 6 7

(Chip) (B, F)

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

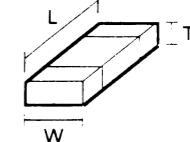
• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J

1 2 3 4 5 6 7

(Chip) (B, F)

Dimension



(EX) R D 1 4 B B 2 C 0 0 0 J

1 2 3 4 5 6 7

1 = Type
 2 = Shape
 3 = Dimension
 4 = Temp. coefficient
 5 = Rating wattage
 6 = Value
 7 = Tolerance

Dimension (Chip resistor)

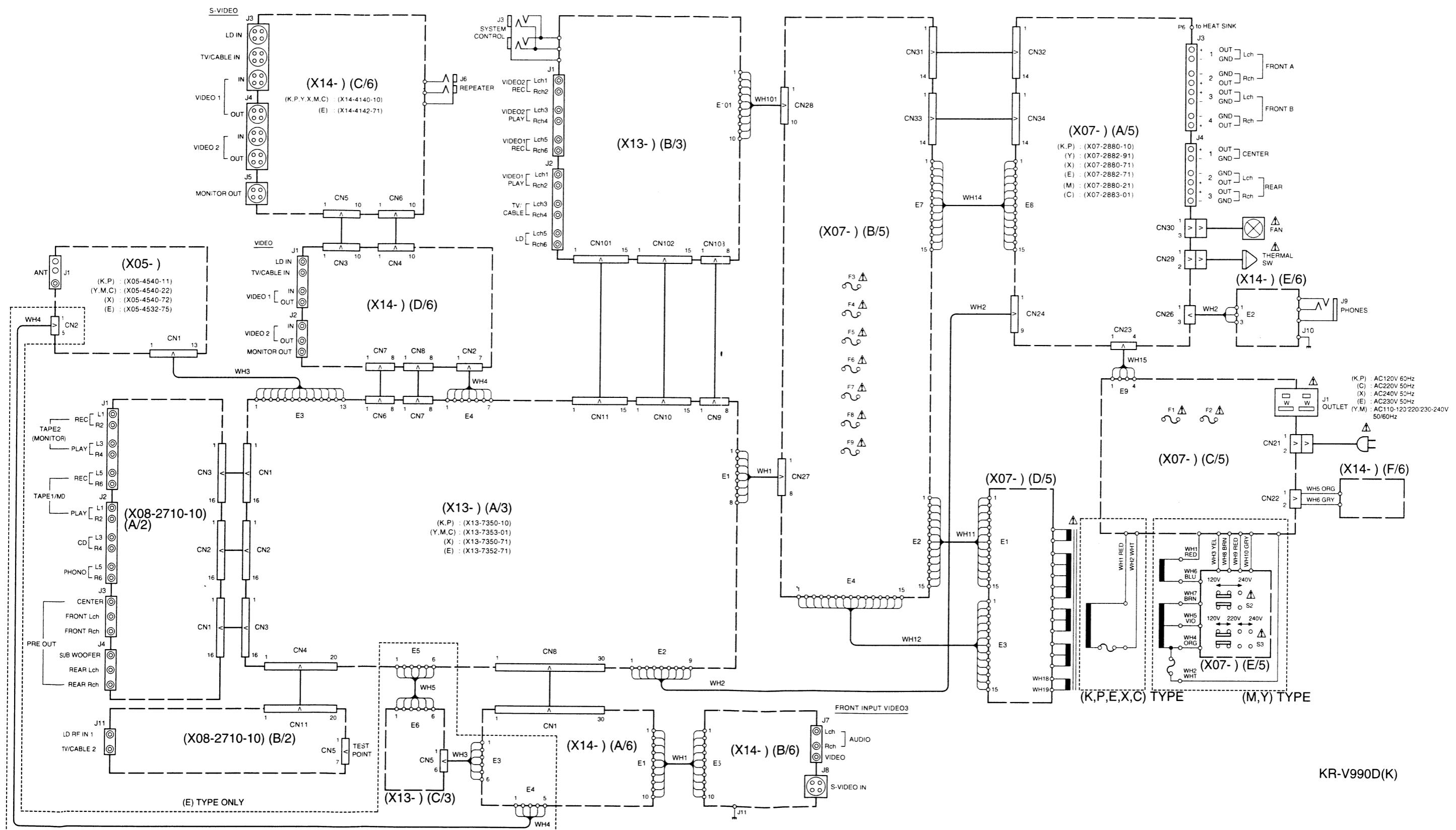
Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1

Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

KR-V990D/V9080 KR-V990D/V9080 WIRING DIAGRAM

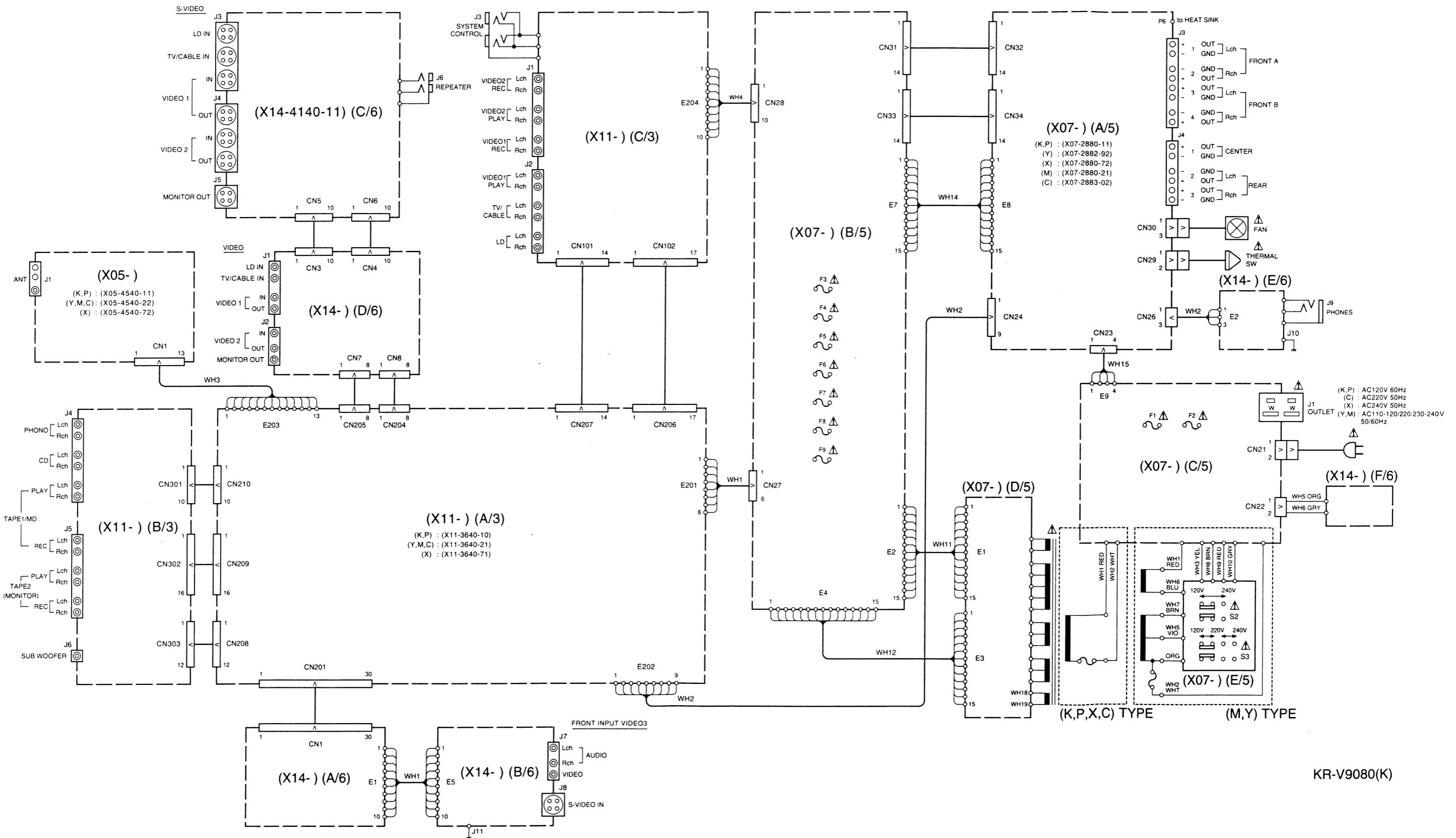
KR-V990D



KR-V990D(K)

KR-V990D/V9080 KR-V990D/V9080 WIRING DIAGRAM

KR-V9080



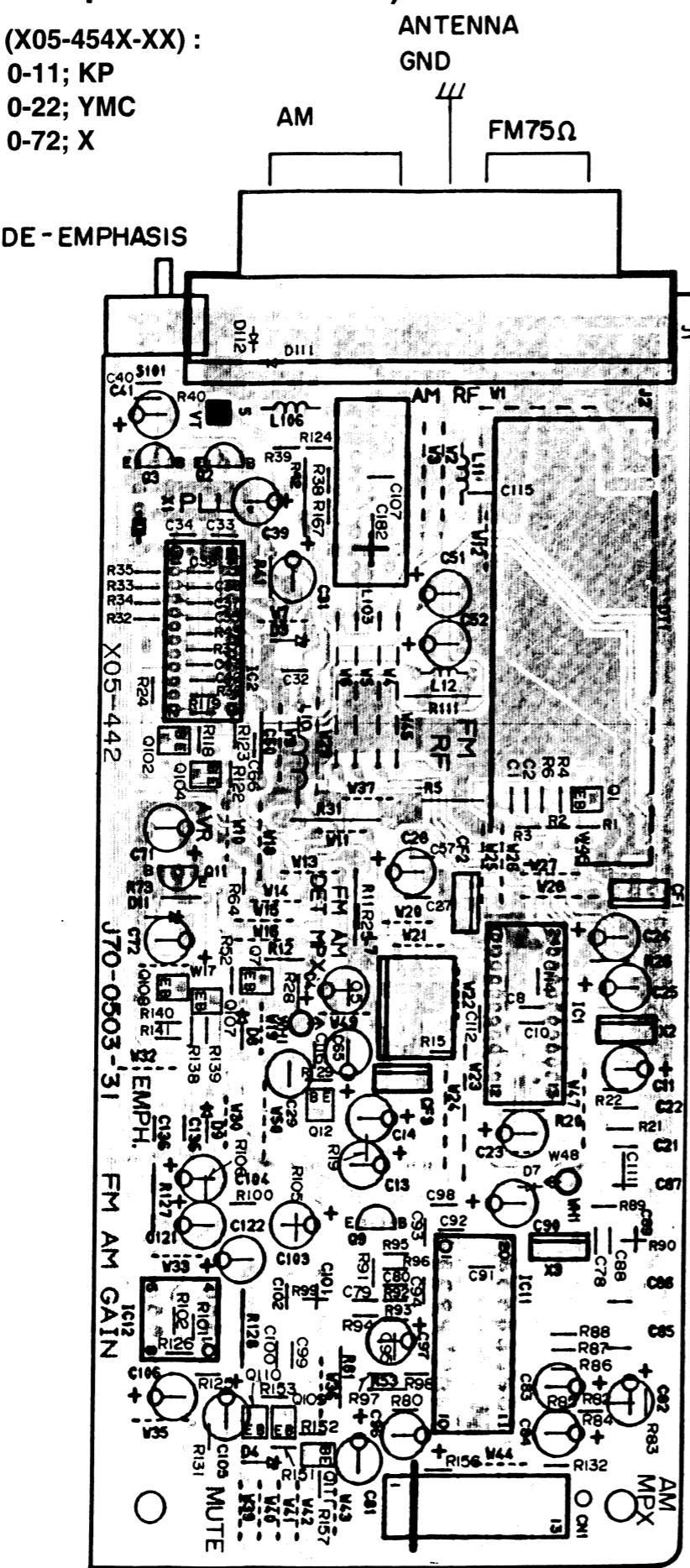
KR-V9080(K)

PC BOARD (Component side view)

TUNER UNIT (X05-454X-XX) :

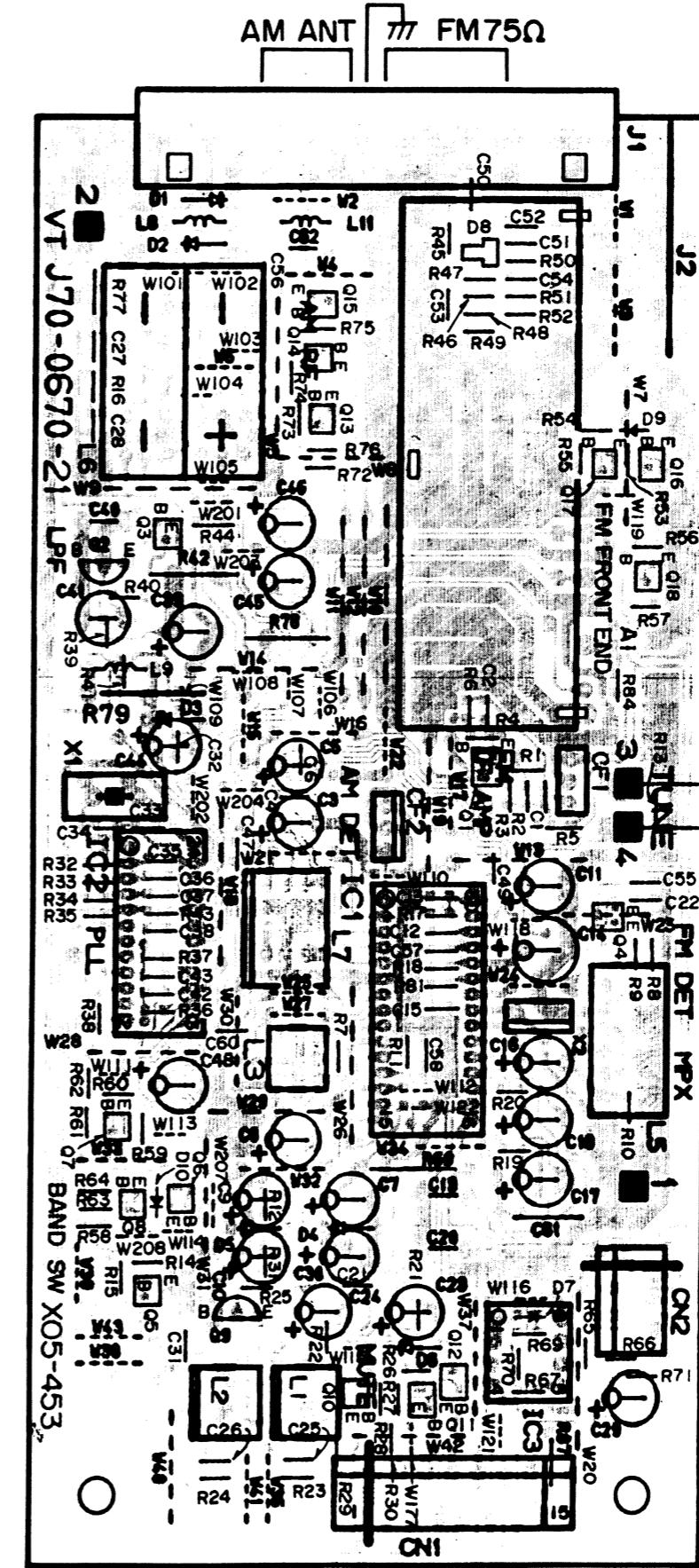
0-11; KP
0-22; YMC
0-72; X

DE - EMPHASIS



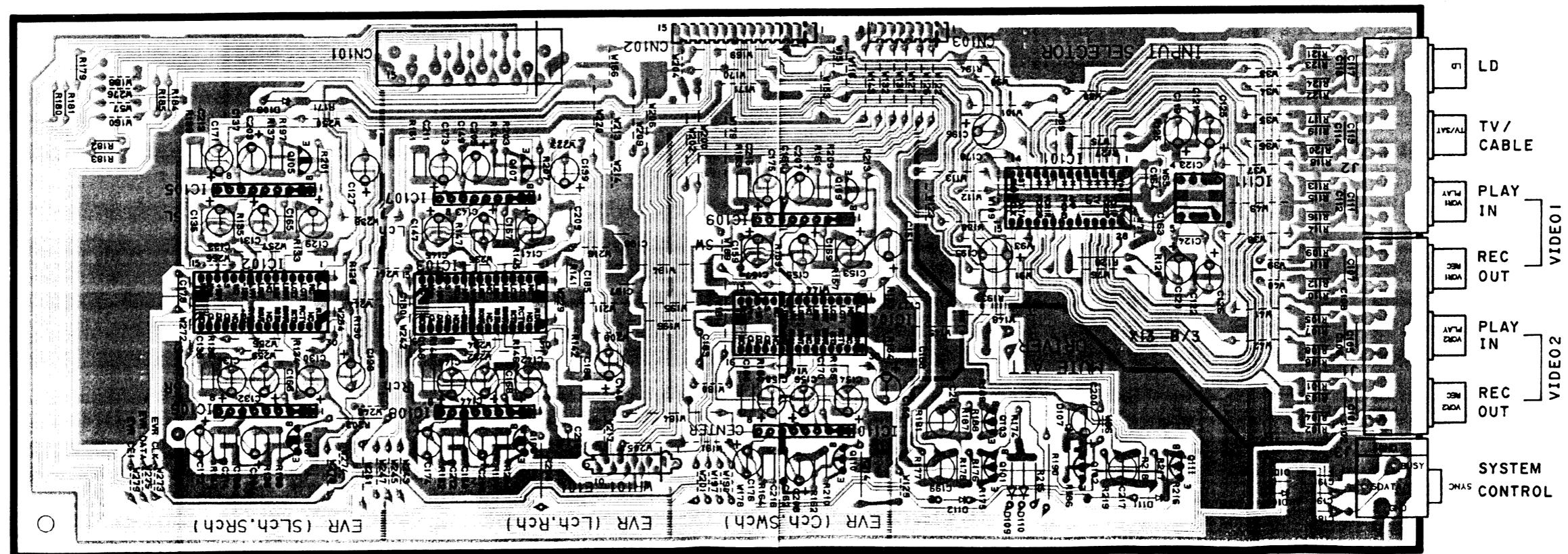
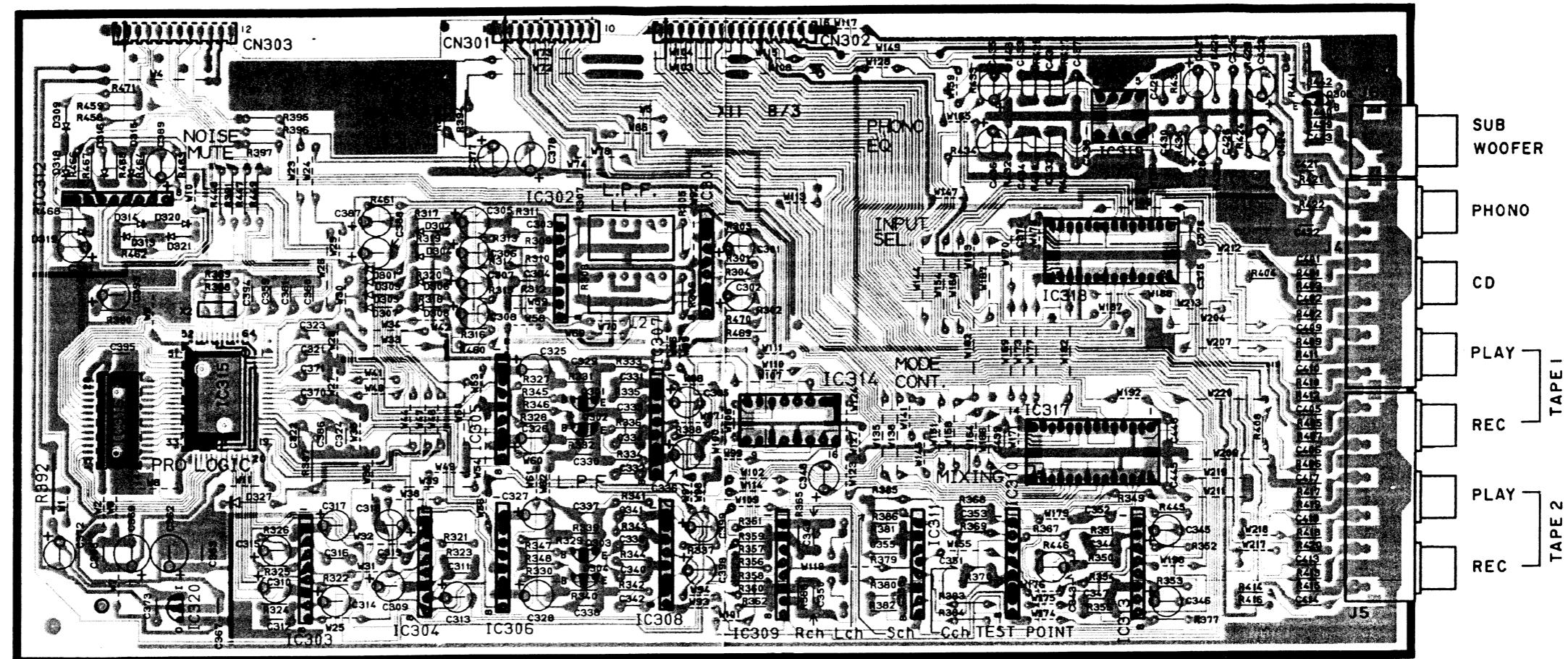
TUNER UNIT (X05-4532-75) : E

**ANTENNA
GND**



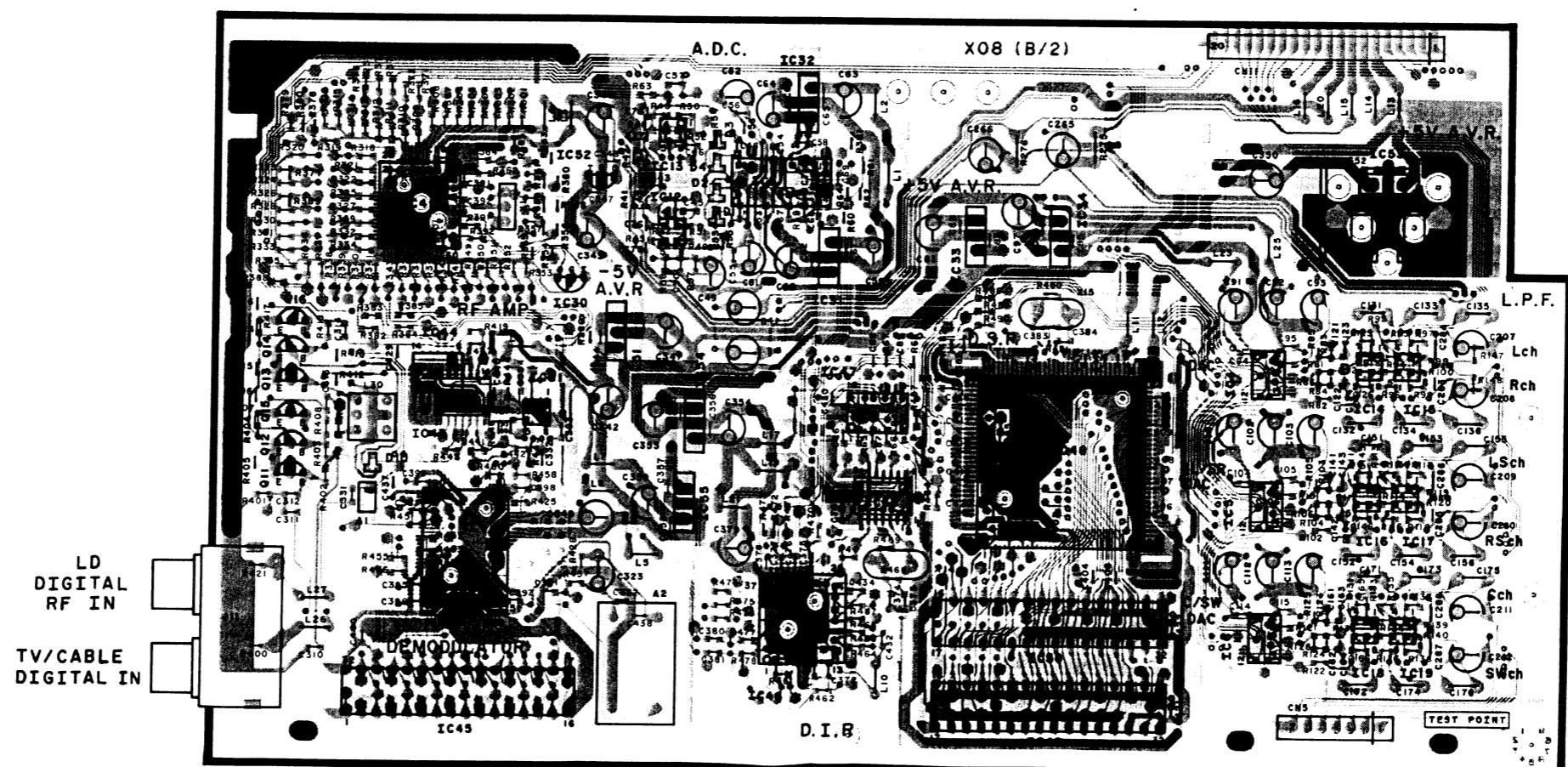
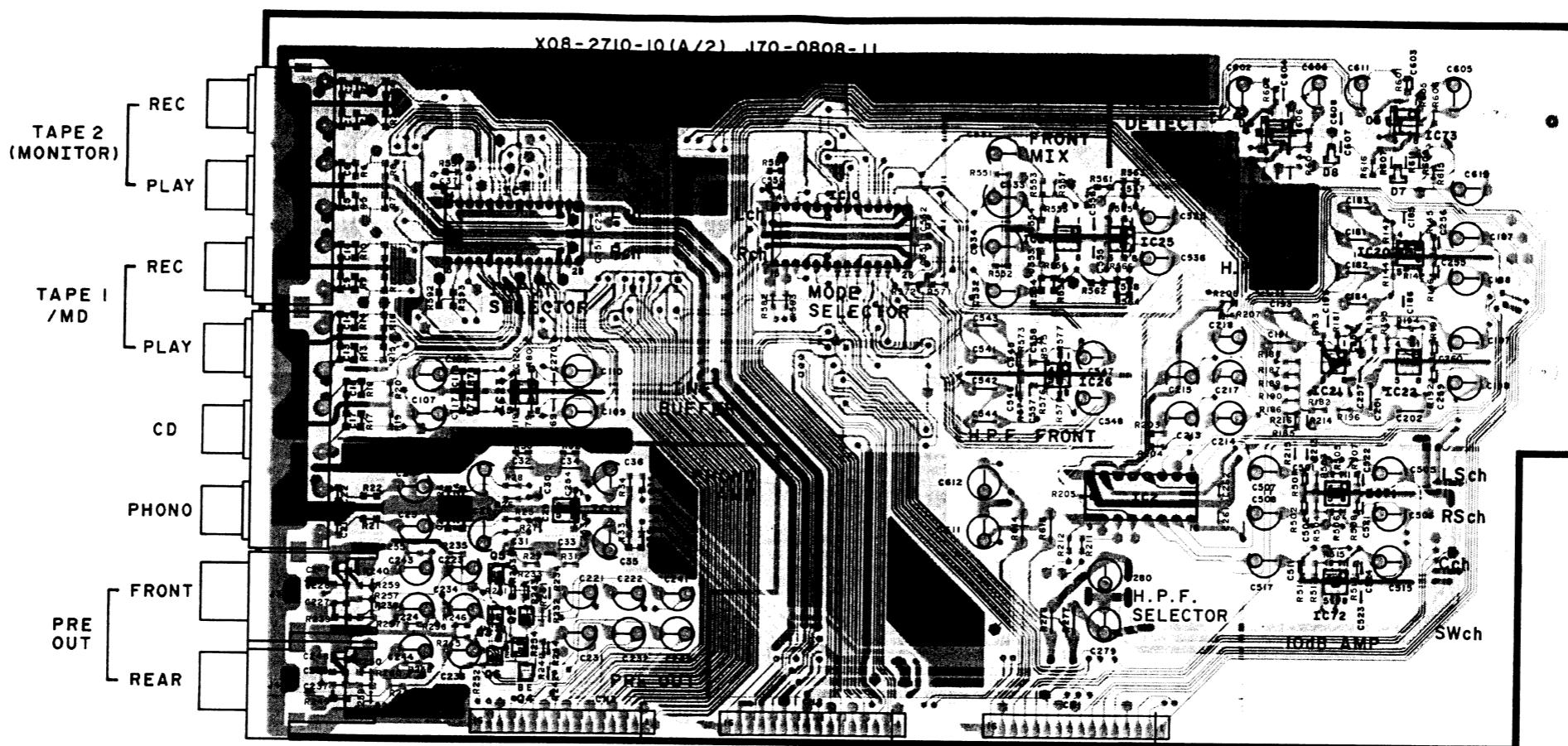
(a) Detector:0V

PC BOARD (Component side view)



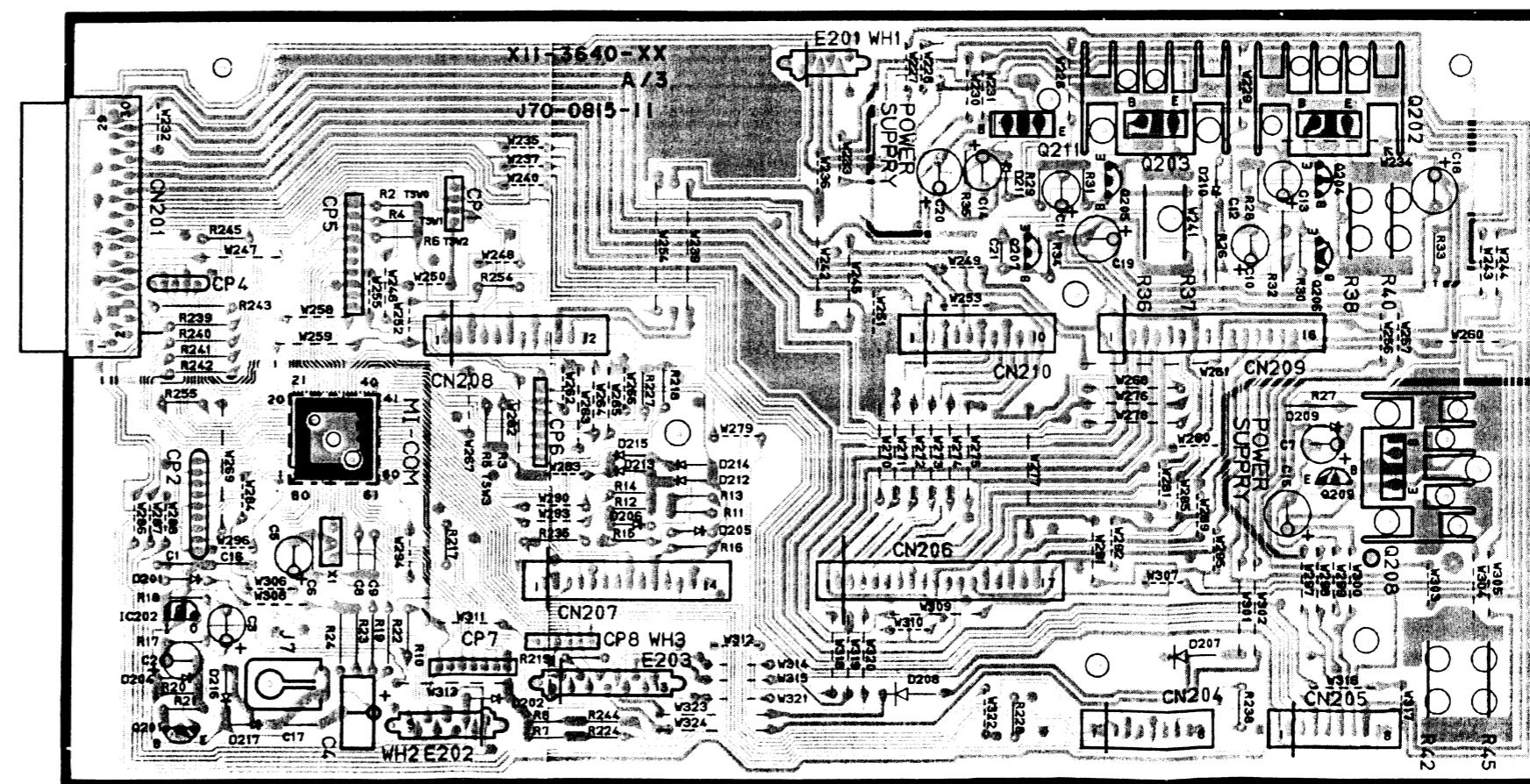
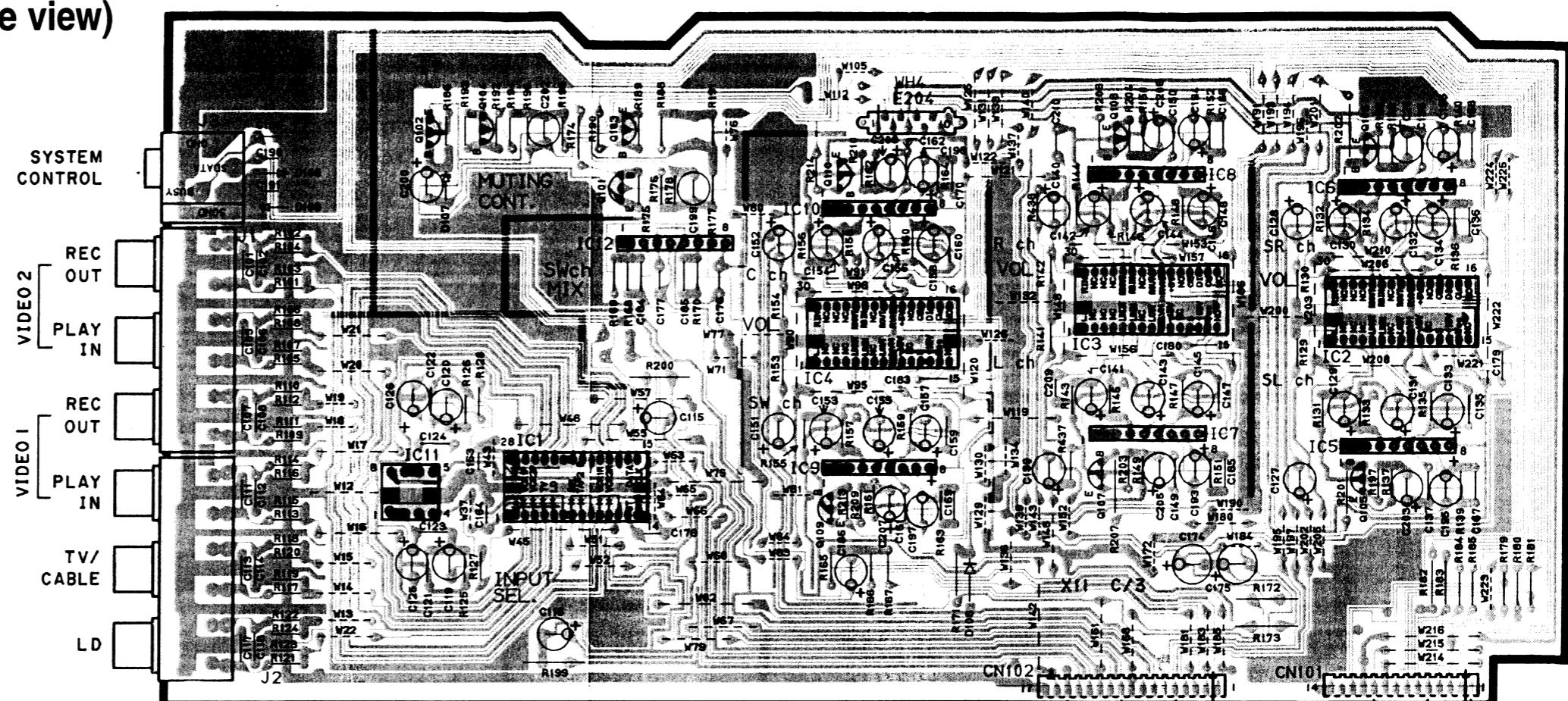
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Component side view) SURROUND UNIT X08-2710-10 (KR-V990D only)



PC BOARD (Component side view)

CONTROL UNIT (X11-364X-XX)
0-10; KP (KR-V9080 only)
0-21; YMC (KR-V9080 only)
0-71; X (KR-V9080 only)



AO

AP

AQ

AR

AS

AT

AU

AV

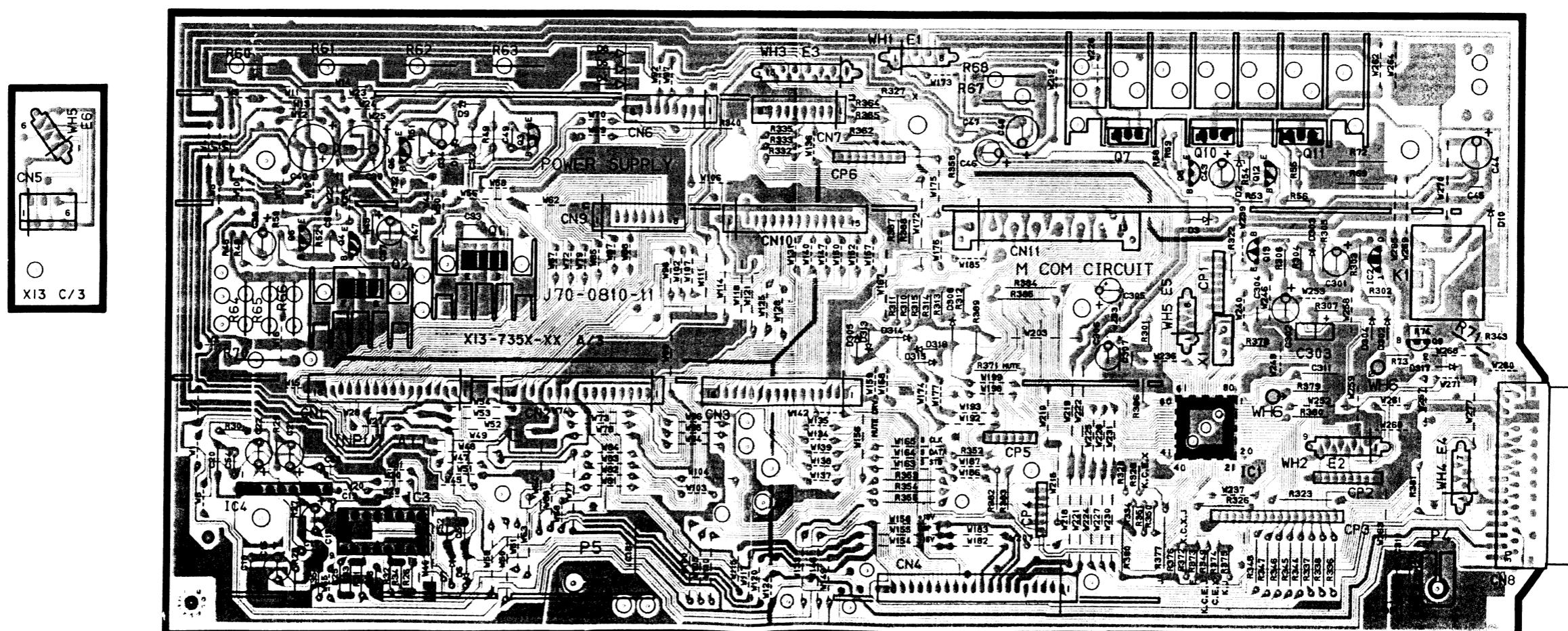
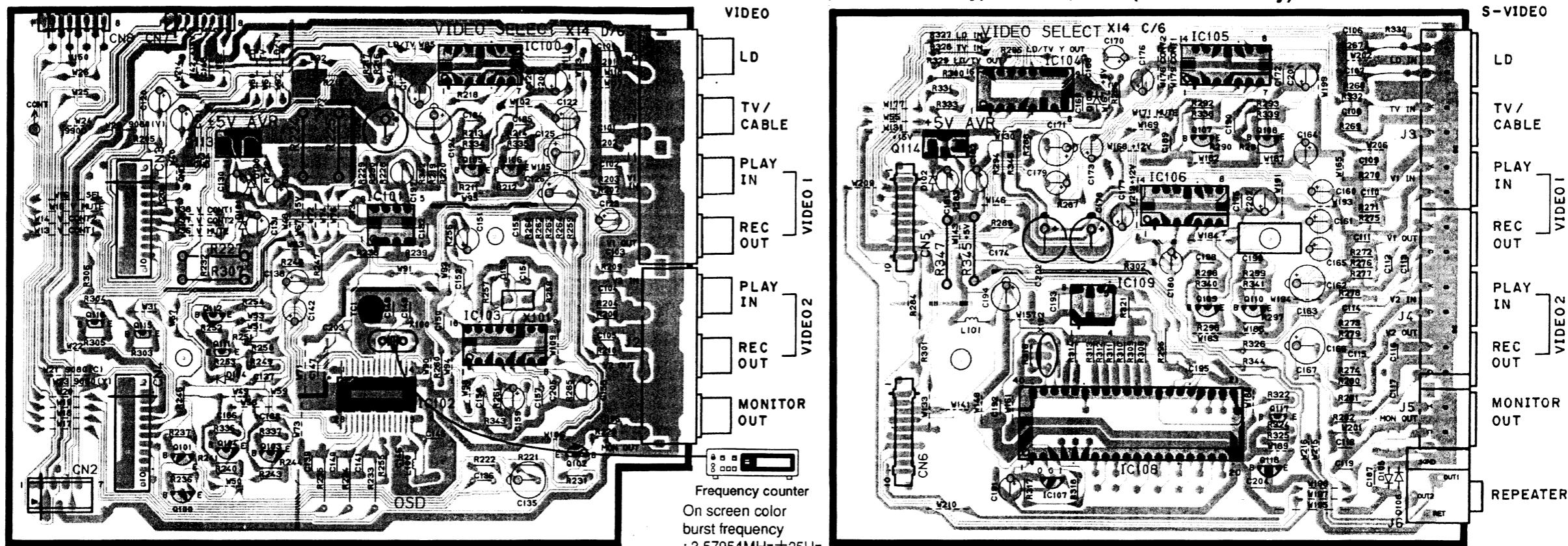
AW

AX

PC BOARD (Component side view) SUB-CIRCUIT UNIT (X13-735X-XX)

0-10; KP (KR-V990D only)
2-71; E (KR-V990D only)

0-71; X (KR-V990D only)
3-01; YMC (KR-V990D only)



AY

AZ

BA

BB

BC

BD

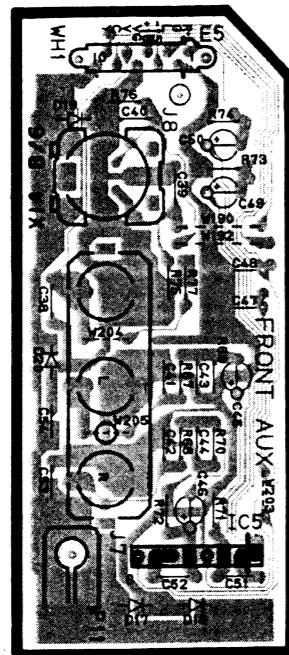
BE

BF

BG

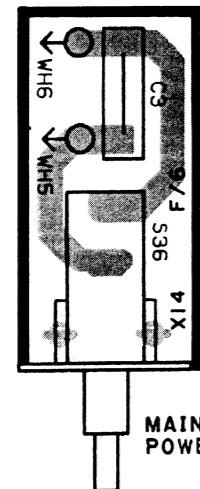
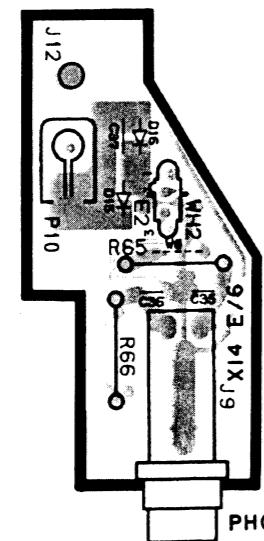
BH

PC BOARD (Component side view)



S-VIDEO

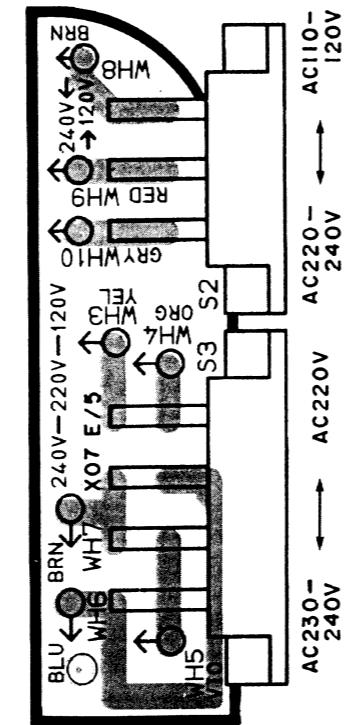
VIDEO

L
R
AUDIOMAIN
POWER

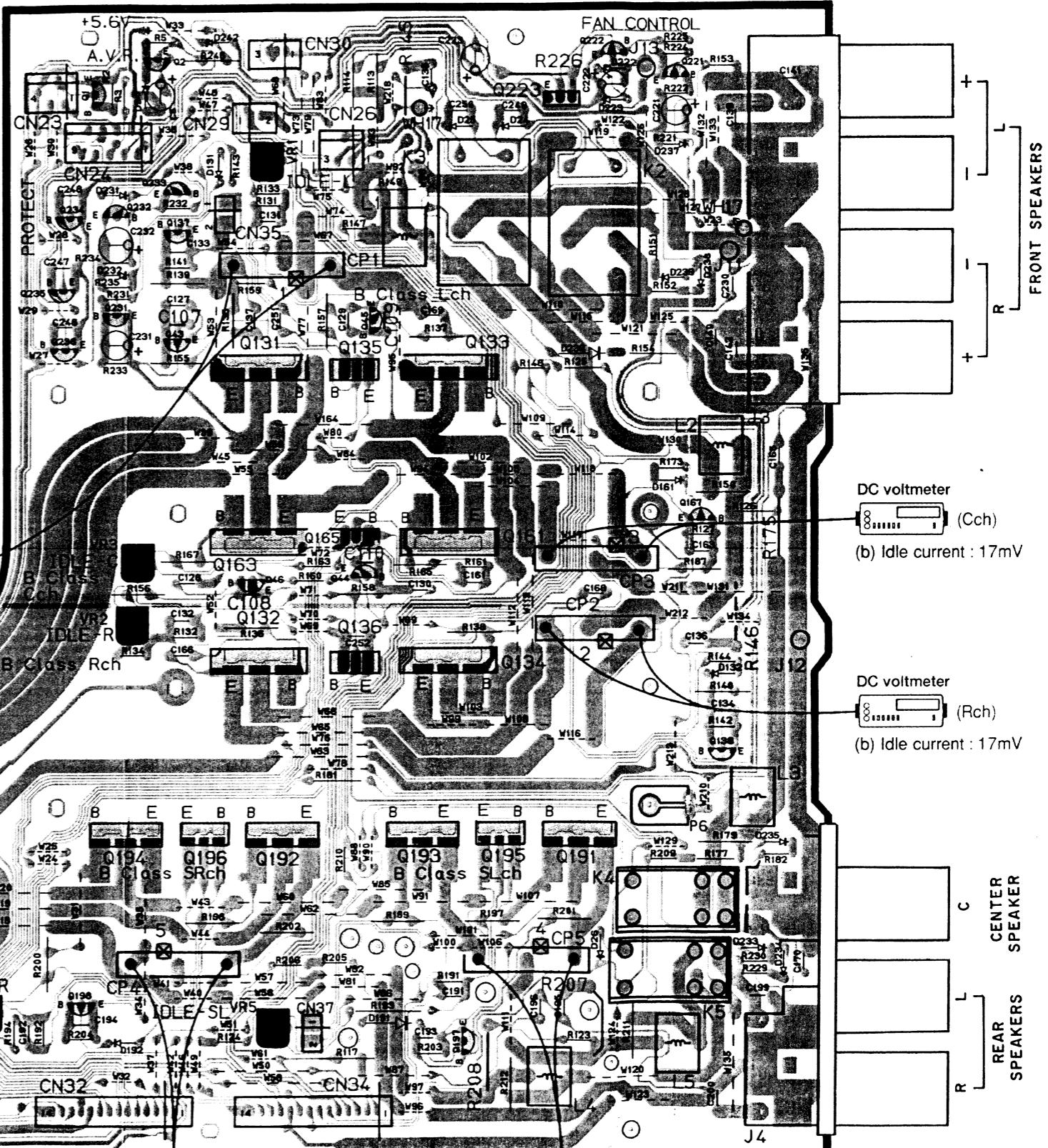
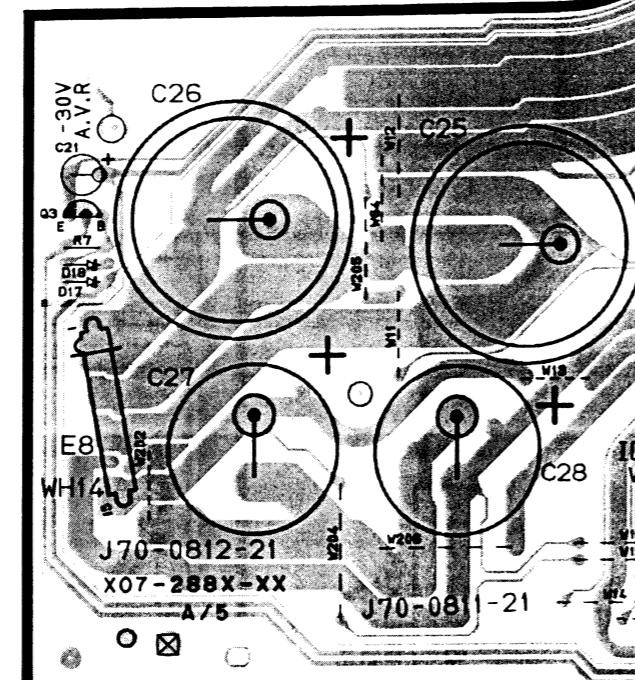
PHONES

MAIN AMP UNIT (X07-288X-XX)

0-10; KP (KR-V990D)	0-11; KP (KR-V9080)	0-21; M (KR-V990D)	0-22; M (KR-V9080)
0-71; X (KR-V990D)	0-72; X (KR-V9080)	2-71; E (KR-V990D)	2-91; Y (KR-V990D)
2-92; Y (KR-V9080)	3-01; C (KR-V990D)	3-02; C (KR-V9080)	



DC voltmeter
(Lch)
(b) Idle current : 17mV

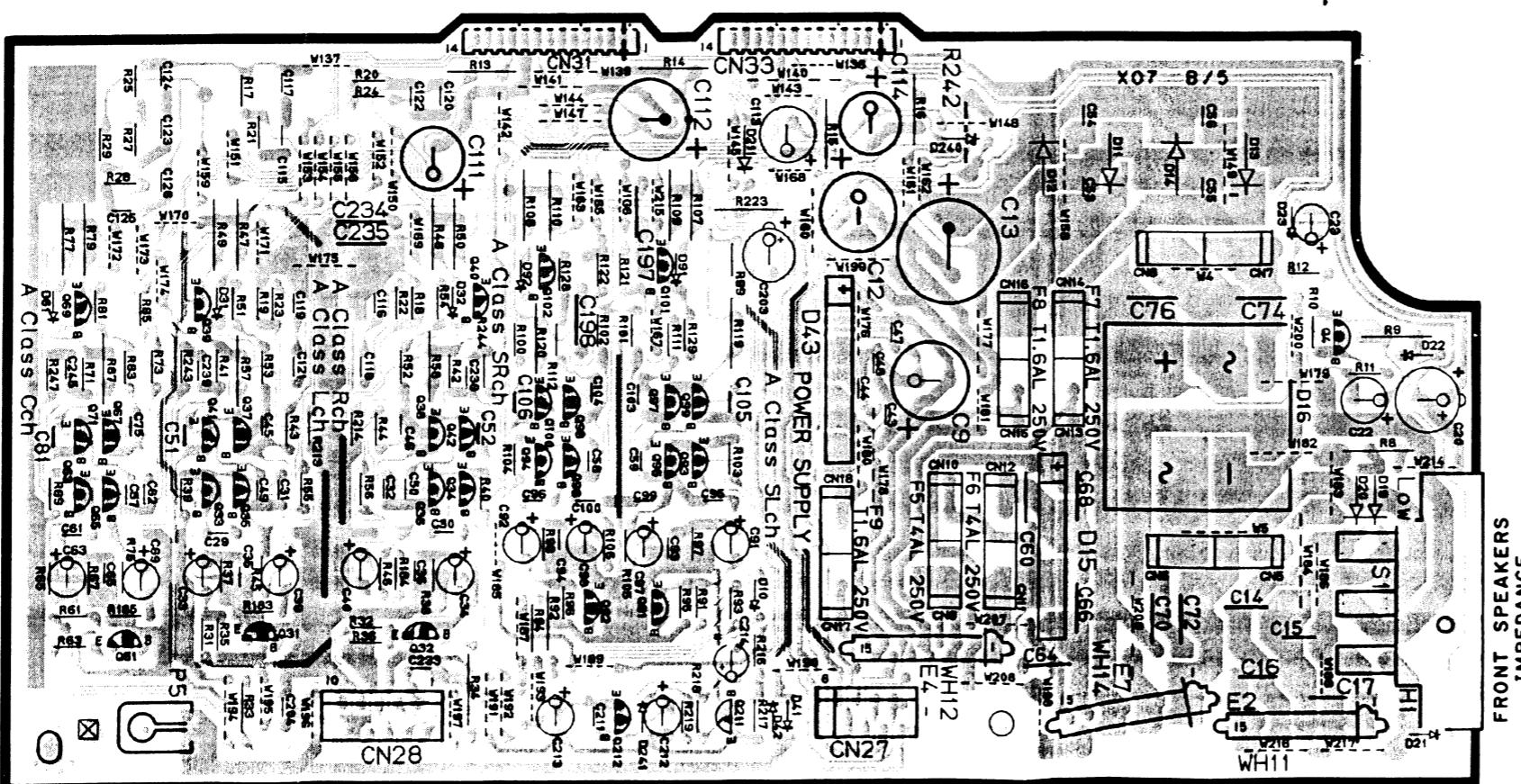
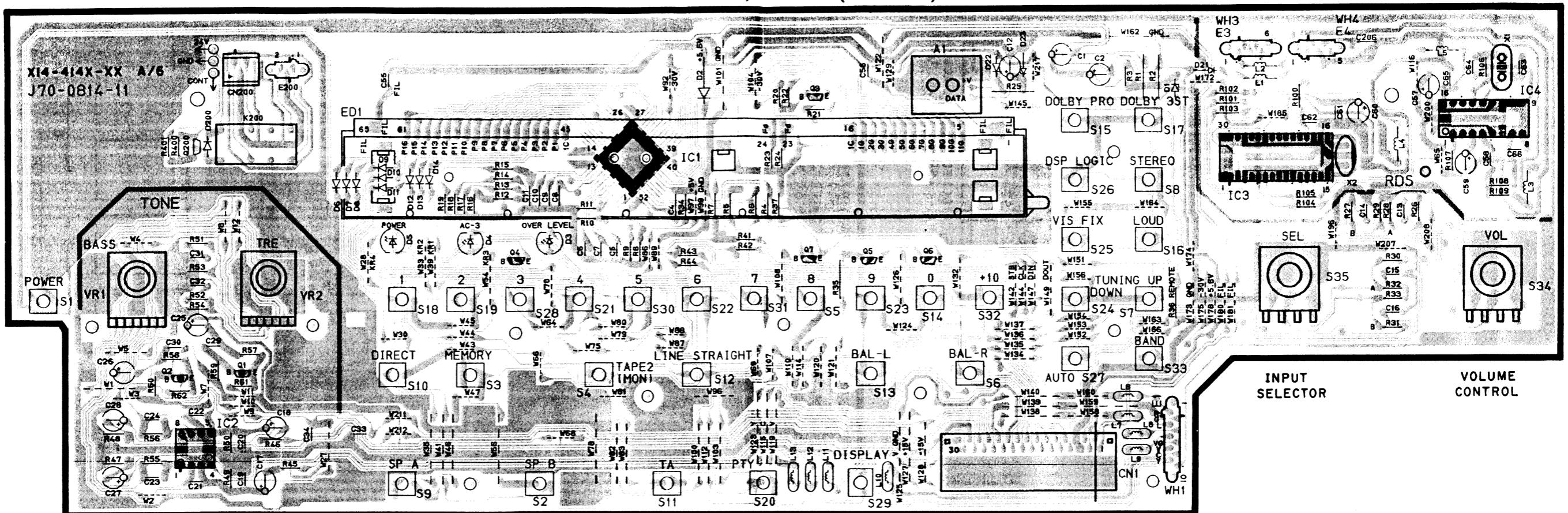


(SRch) DC voltmeter
(b) Idle current : 10mV

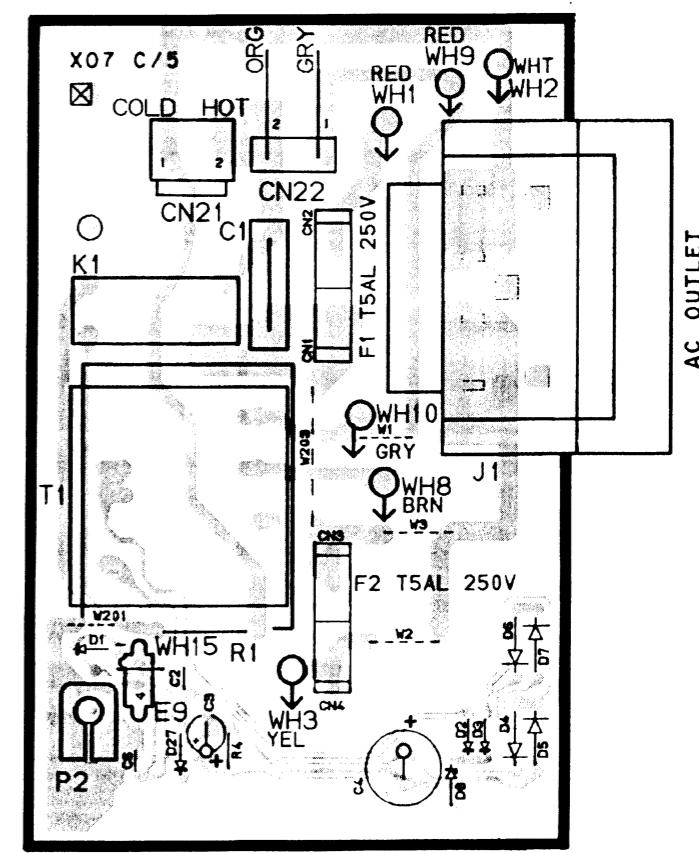
(SLch) DC voltmeter
(b) Idle current : 10mV

BI BJ BK BL BM BN BO BP BQ BR

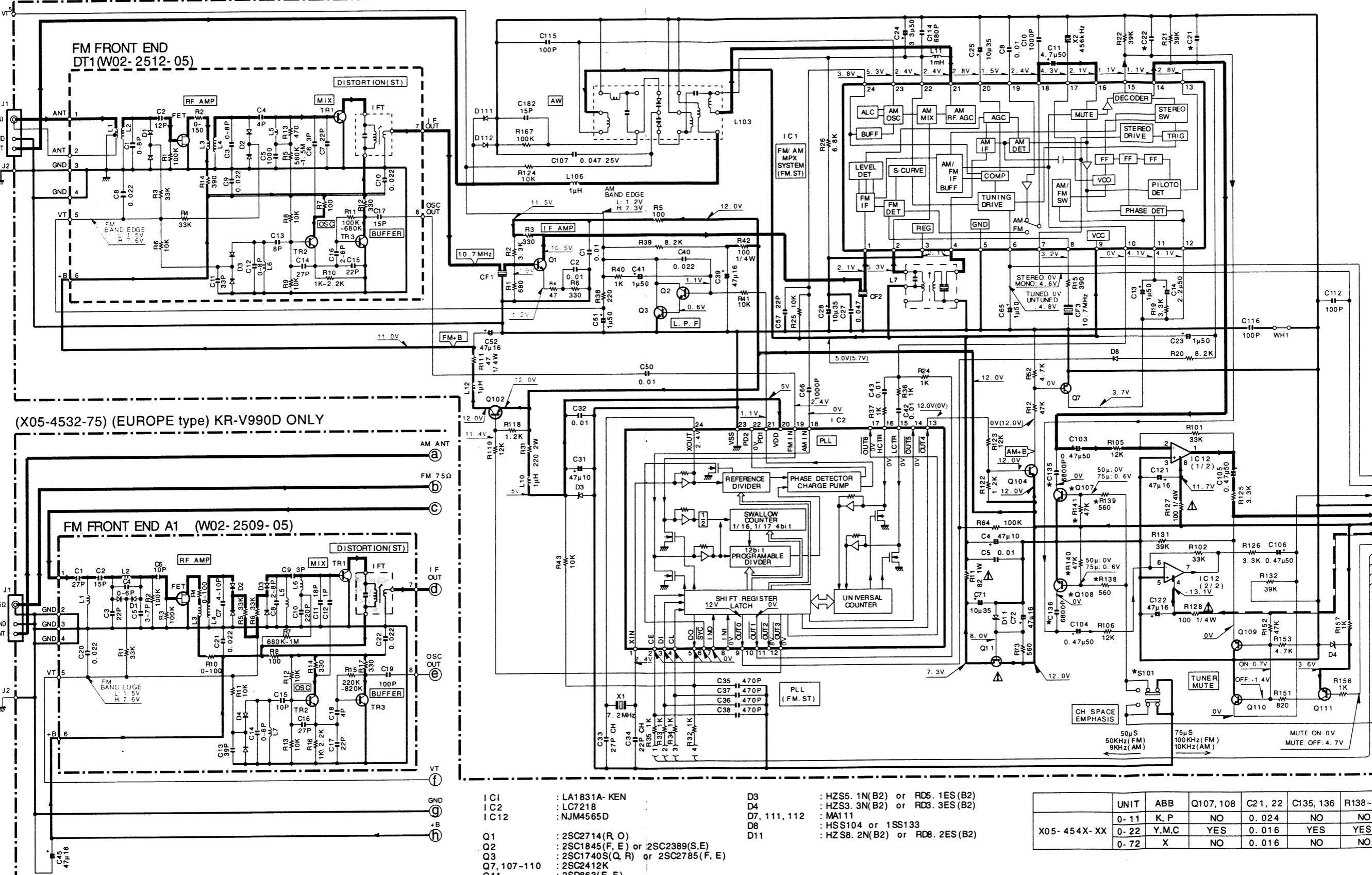
PC BOARD (Component side view) DISPLAY UNIT (X14-414X-XX) 0-10; KPYXMC (KR-V990D)
0-11; KPYXMC (KR-V9080) 2-71; E (KR-V990D)



FRONT SPEAKERS IMPEDANCE
SELECTOR



TUNER UNIT (X05-4540-XX) (Except for EUROPE type)



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

I C1 : LA1831A-KEN
I C2 : LC7218
I C12 : NJM4565D

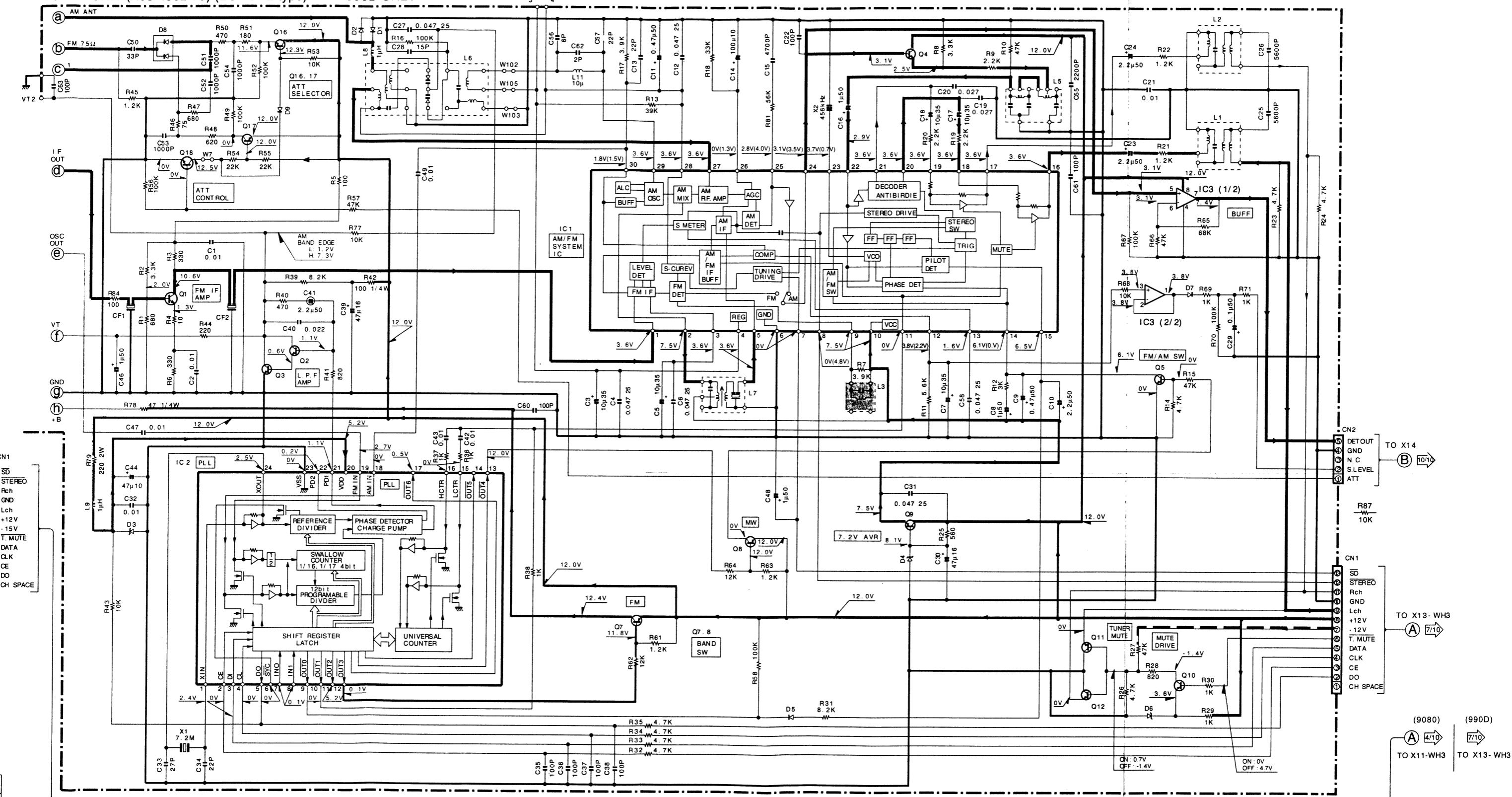
Q1 : 2SC2714(R, O)
Q2 : 2SC1845(F, E) or 2SC2389(S, E)
Q3 : 2SC1740S(Q, R) or 2SC2785(F, E)
Q7, 107-110 : 2SC2412K
Q11 : 2SD863(E, F)
Q102, 104, 111 : 2SA1037K

D3 : HZS5. 1N(B2) or RD5. 1ES(B2)
D4 : HZS3. 3N(B2) or RD3. 3ES(B2)
D7, 111, 112 : MA111
D8 : HSS104 or 1SS133
D11 : HZS8. 2N(B2) or RD8. 2ES(B2)

	UNIT	ABB	Q107, 108	C21, 22	C135, 136	R138-141	S101
X05-454X-XX	0-11	K, P	NO	0.024	NO	NO	NO
	0-22	Y, M, C	YES	0.016	YES	YES	YES
	0-72	X	NO	0.016	NO	NO	NO

MODE	CARRIER	MODULATION	
		FREQUENCY	DE
FM	98MHz	1kHz	STEREO 67.5
AM	1000(999)kHz	400Hz	MONO 30%

TUNER UNIT (X05-4532-75) (EUROPE type) KR-V990D ONLY



I C1 : LA1836
I C2 : LC7218
I C3 : M5223P

Q1 : 2SC2714 (R, O)
Q2 : 2SC1845 (F, E)
Q3, 4, 5, 16, 18 : 2SC4081 (R, S)
Q7, 8, 10, 17 : 2SA1576 (R, S)
Q9 : 2SD863 (E, F)
Q11, 12 : 2SD1757K

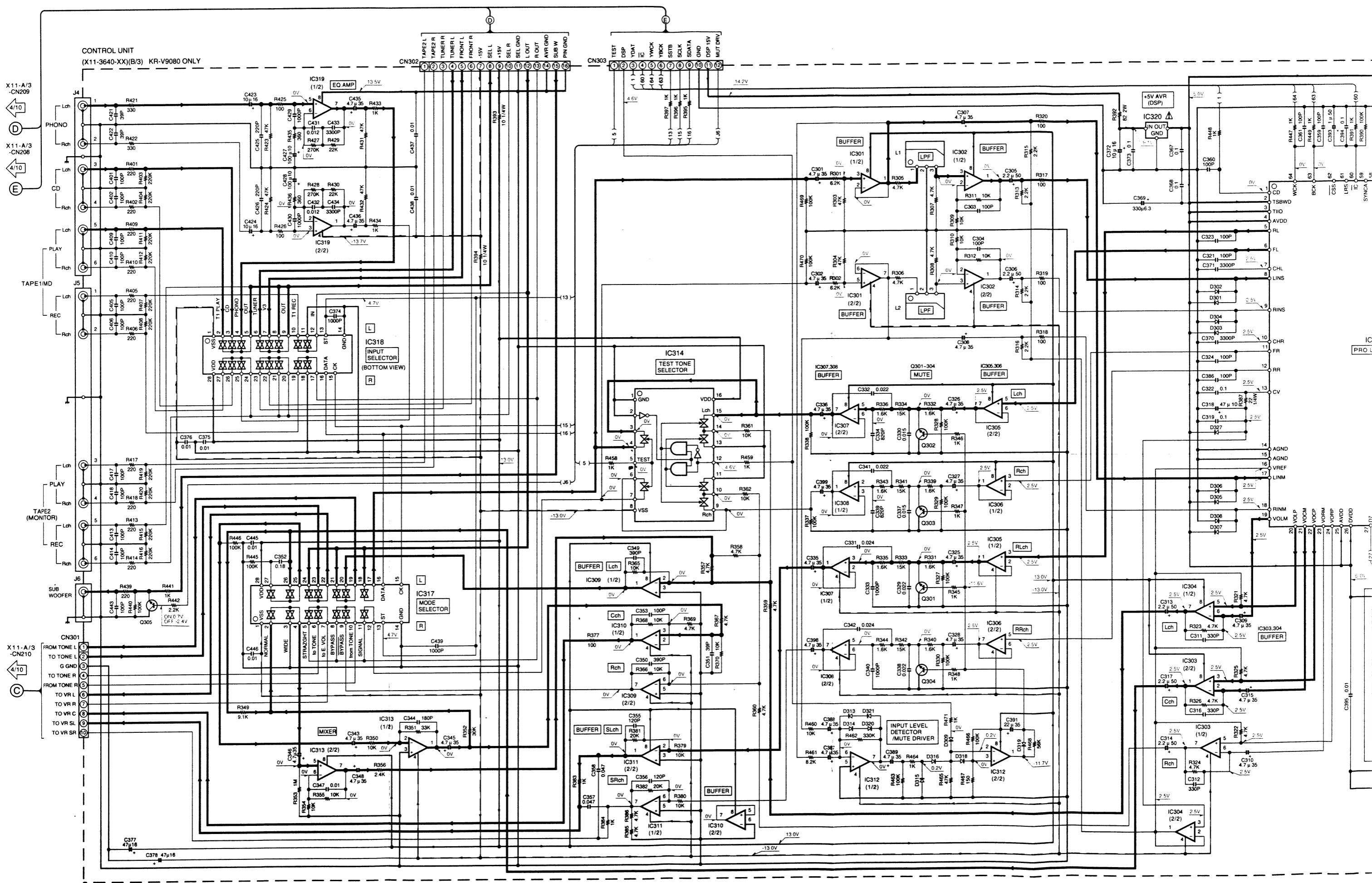
D1, 2, 5 : 1SS133 or HSS104
D3 : RD5.1ES(B2) or HZS5.1N(B2)
D4 : RD8.2ES(B2) or HZS8.2N(B2)
D6 : RD3.3ES(B2) or HZS3.3N(B2)
D7, 9 : MA111
D8 : 1SS268

KR-V990D/V9080 (1/10)

SIGNAL LINE
GND LINE
+B LINE
-B LINE

Y05-3070-10

KR-V990D/V9080
KENWOOD



AF

AG

AH

AI

AJ

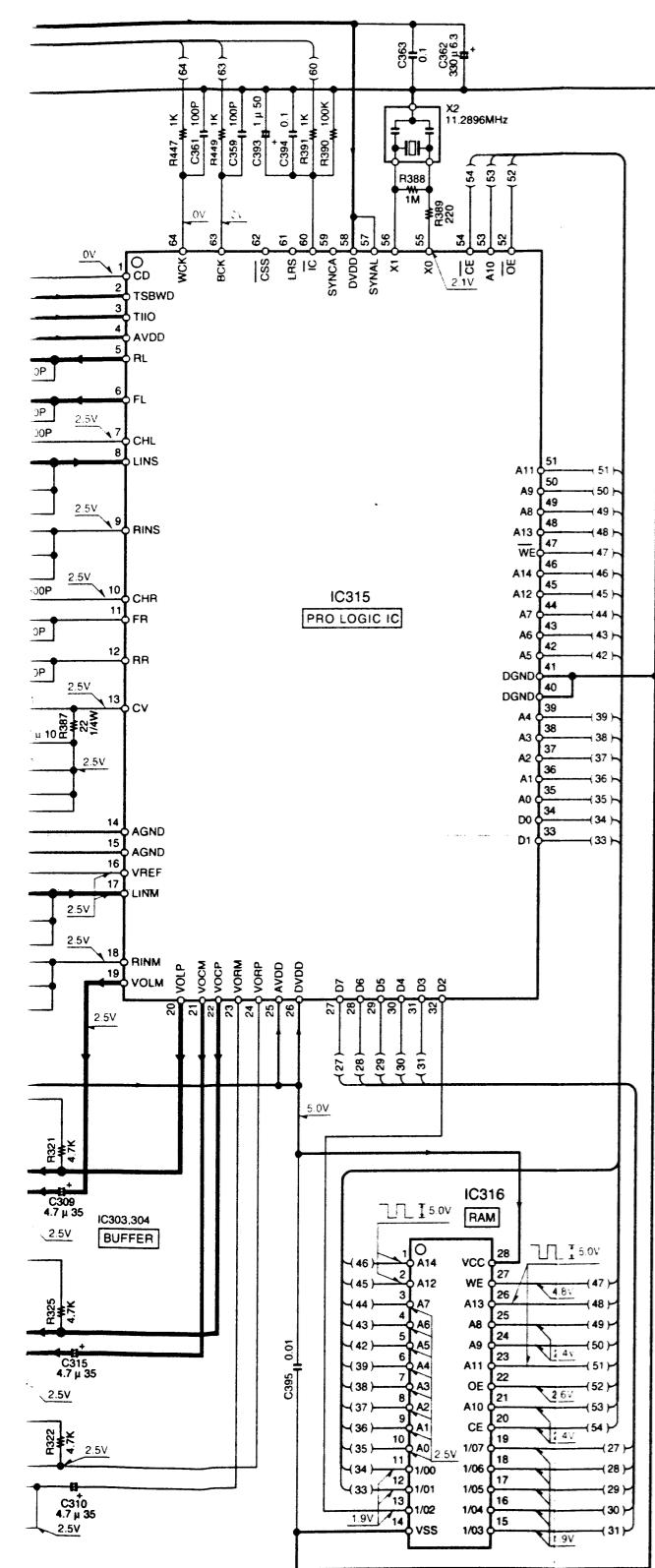
AK

AL

AM

AN

AO

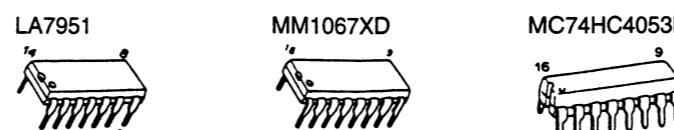
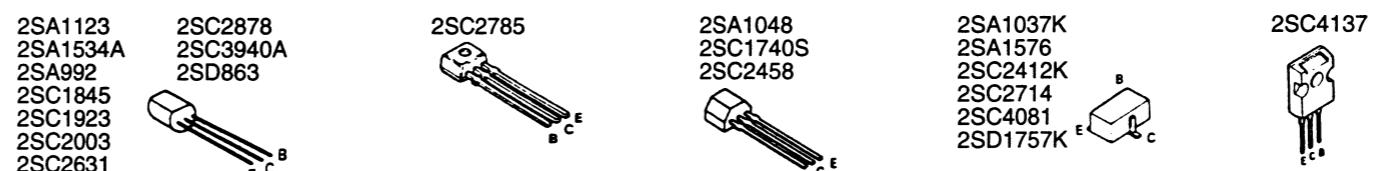


CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.



IC301,302,307-313
: NJM4565L
IC303,304: NJM4580L
IC305,306: NJM072BL or
NJM2082L
IC314 : TC9215P
IC315 : YSS215-F
IC316 : HM65256BLFP-10
IC317 : NJU7311A
IC318 : NJU7312A
IC319 : NJM4580D-D
IC320 : NJM78105A

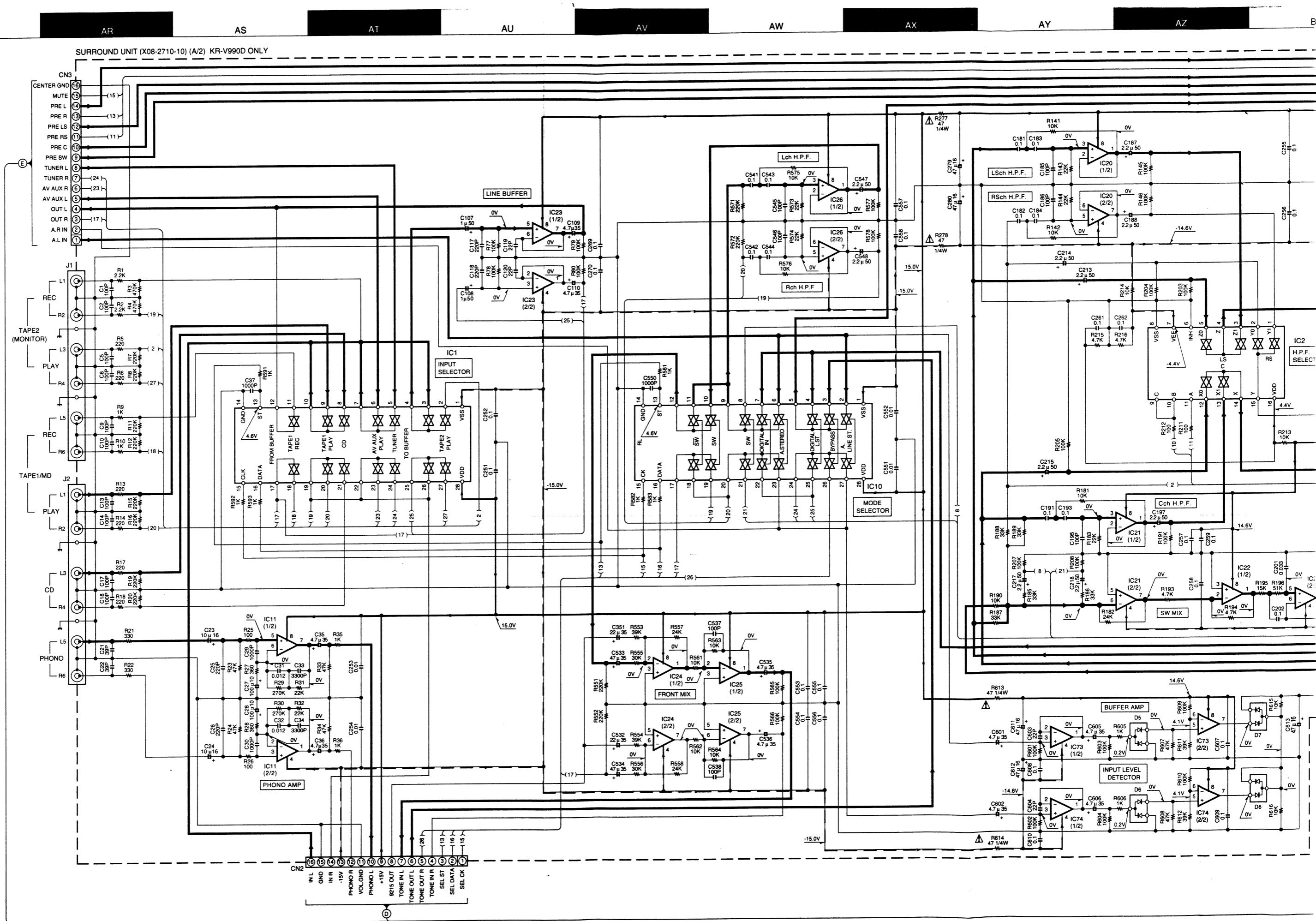
Q301-305: 2SC2878(B)
D301-309,313-316,
318-321,327
HSS104 or
ISS133

SIGNAL LINE
GND LINE
+B LINE
-B LINE

KR-V9080(K) (2/10)

Y05-3070-10

KR-V990DA
KENWOOD



BA

BB

BC

BD

BE

BF

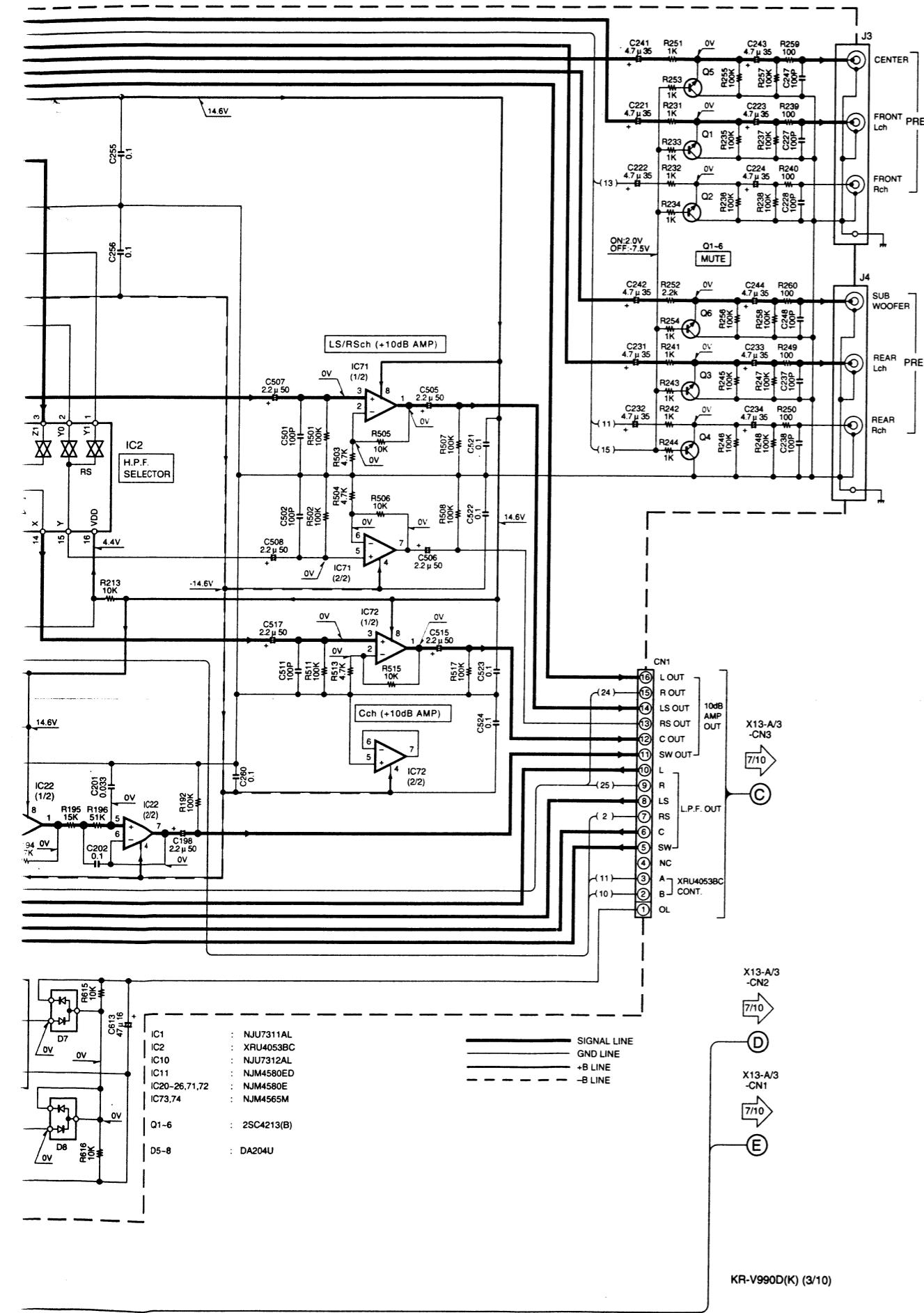
BG

BH

BI

BJ

BK

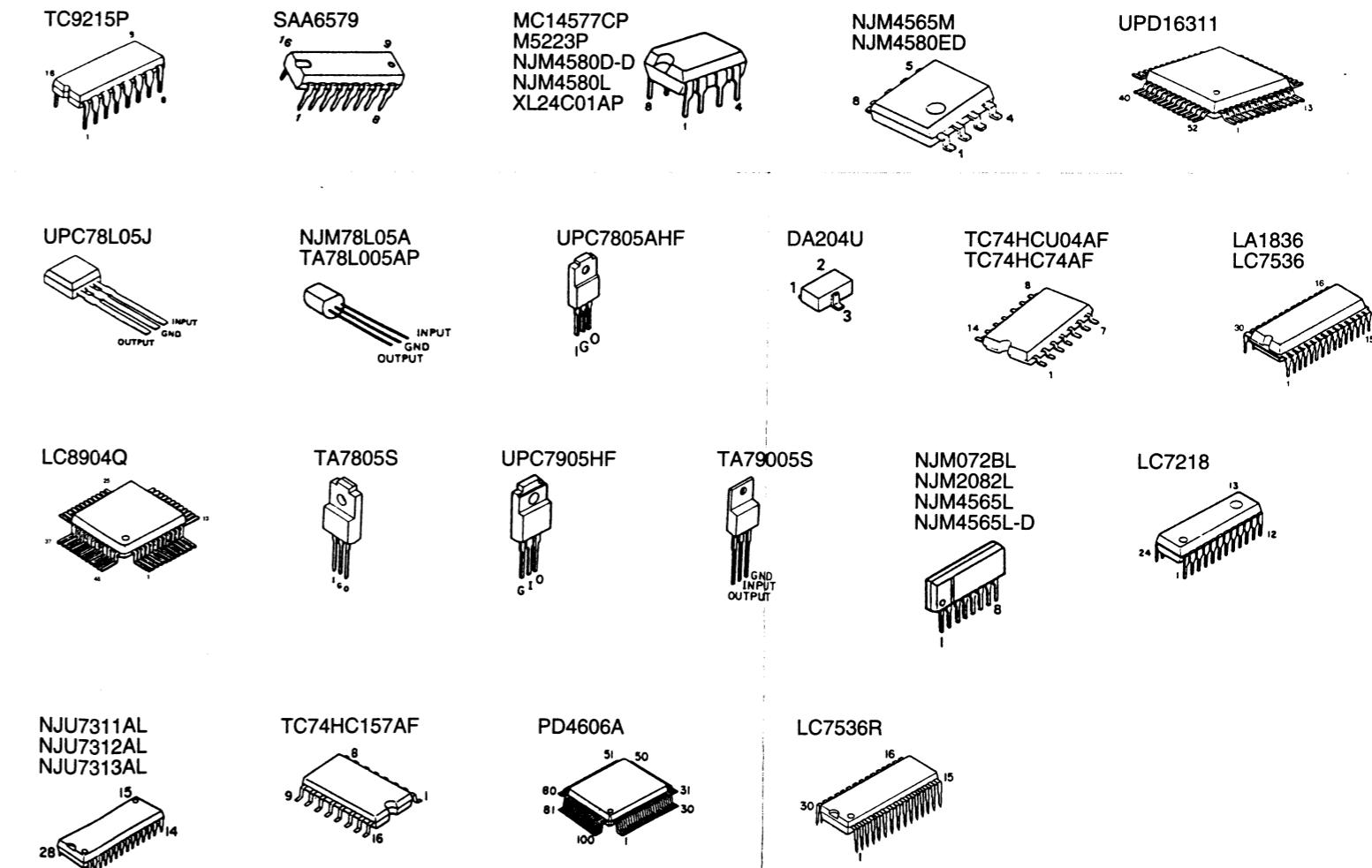


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		FREQUENCY	DEVIATION	
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AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

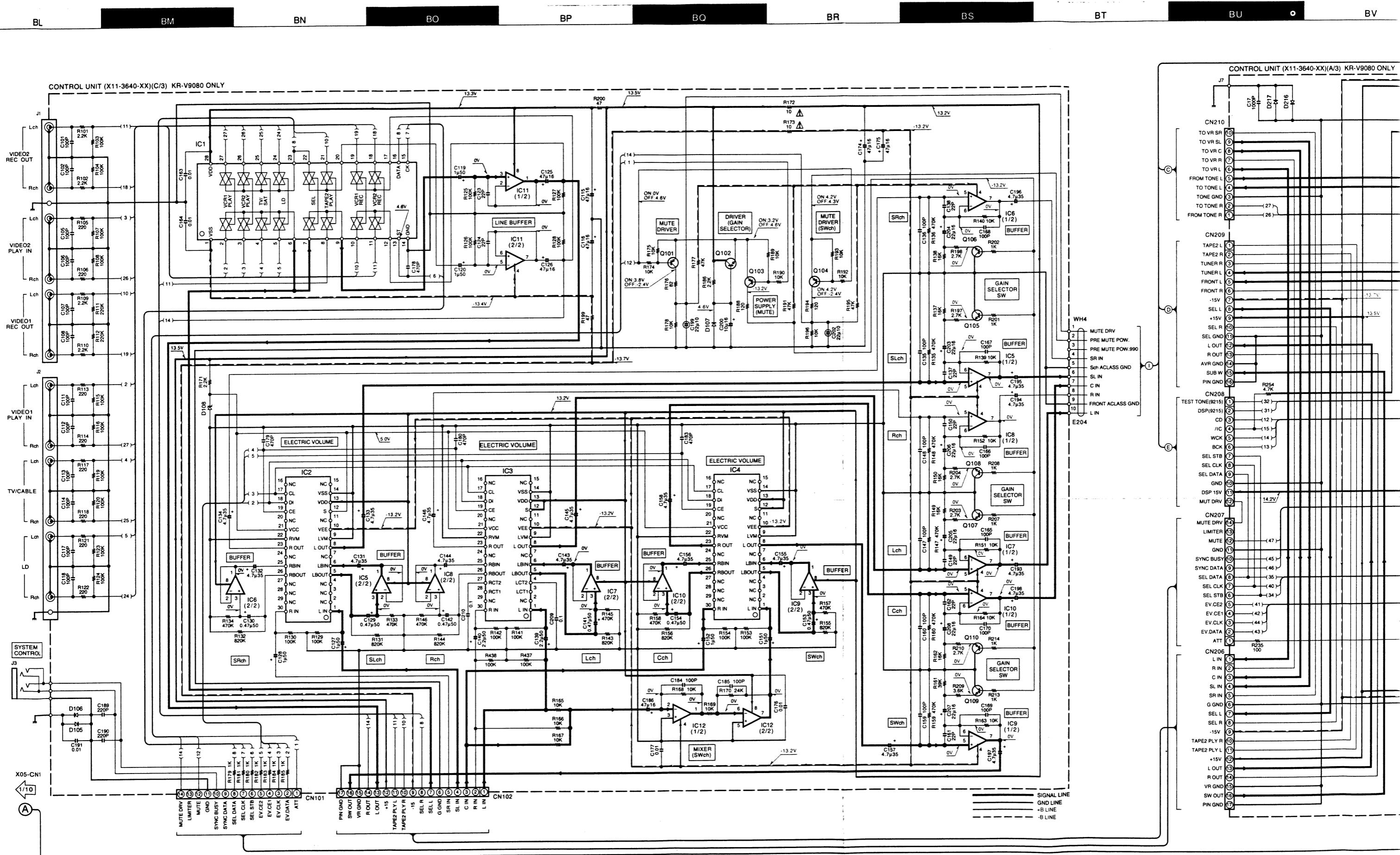
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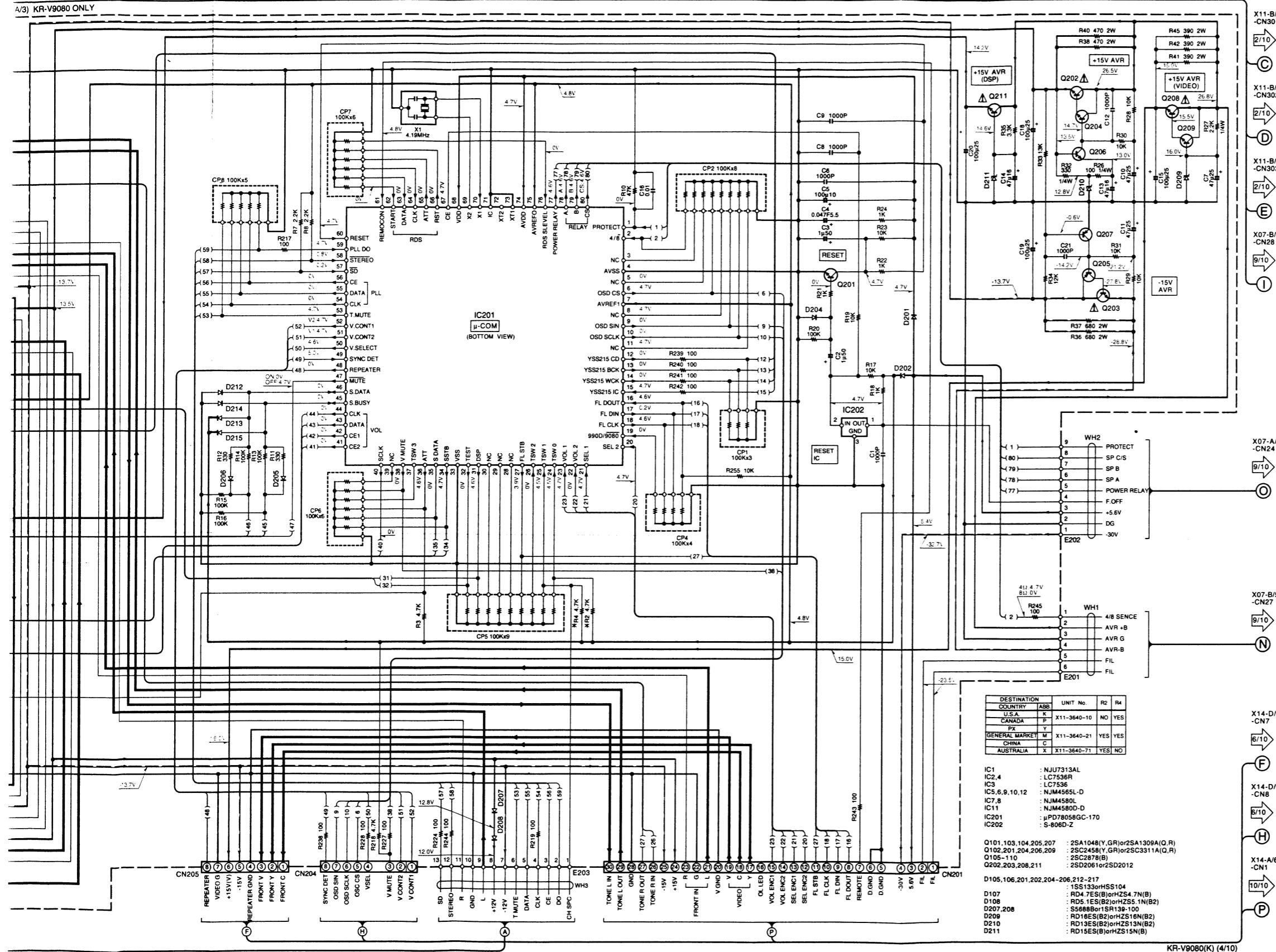
KR-V990D/V9

KENWOOD

Y05-3070-10



A/3) KR-V9080 ONLY

X11-B/3
-CN3012/10
CX11-B/3
-CN3022/10
DX11-B/3
-CN3032/10
EX07-B/5
-CN289/10
IX07-A/5
-CN249/10
JX07-B/5
-CN279/10
NX14-D/6
-CN76/10
FX14-D/6
-CN86/10
HX14-A/6
-CN110/10
P

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

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		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

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KR-V990D/V9080

KENWOOD

Y05-3070-10

DESTINATION	UNIT No	R2	R4
U.S.A.	X	X11-3640-10	NO YES
CANADA	P		
PX	Y		
GENERAL MARKET	M	X11-3640-21	YES YES
CHINA	C		
AUSTRALIA	X	X11-3640-71	YES NO

IC1	: NJU7313AL
IC2,4	: LC7536R
IC3	: LC7536
IC5,6,9,10,12	: NJU4565L-D
IC7,8	: NJU4580L
IC11	: NJU4580D-D
IC201	: PJD7058GC-170
IC202	: S-806D-Z

Q101,103,104,205,207 : 2SA1048(Y,GR)or2SA1309A(Q,R)
Q102,200,204,206,209 : 2SC2458(Y,GR)or2SC3311A(Q,R)
Q105,110 : 2SC2878(B)

Q202,203,208,211 : 2SD2061or2SD2012

D105,106,201,202,204-206,217 : ISS133orISS104

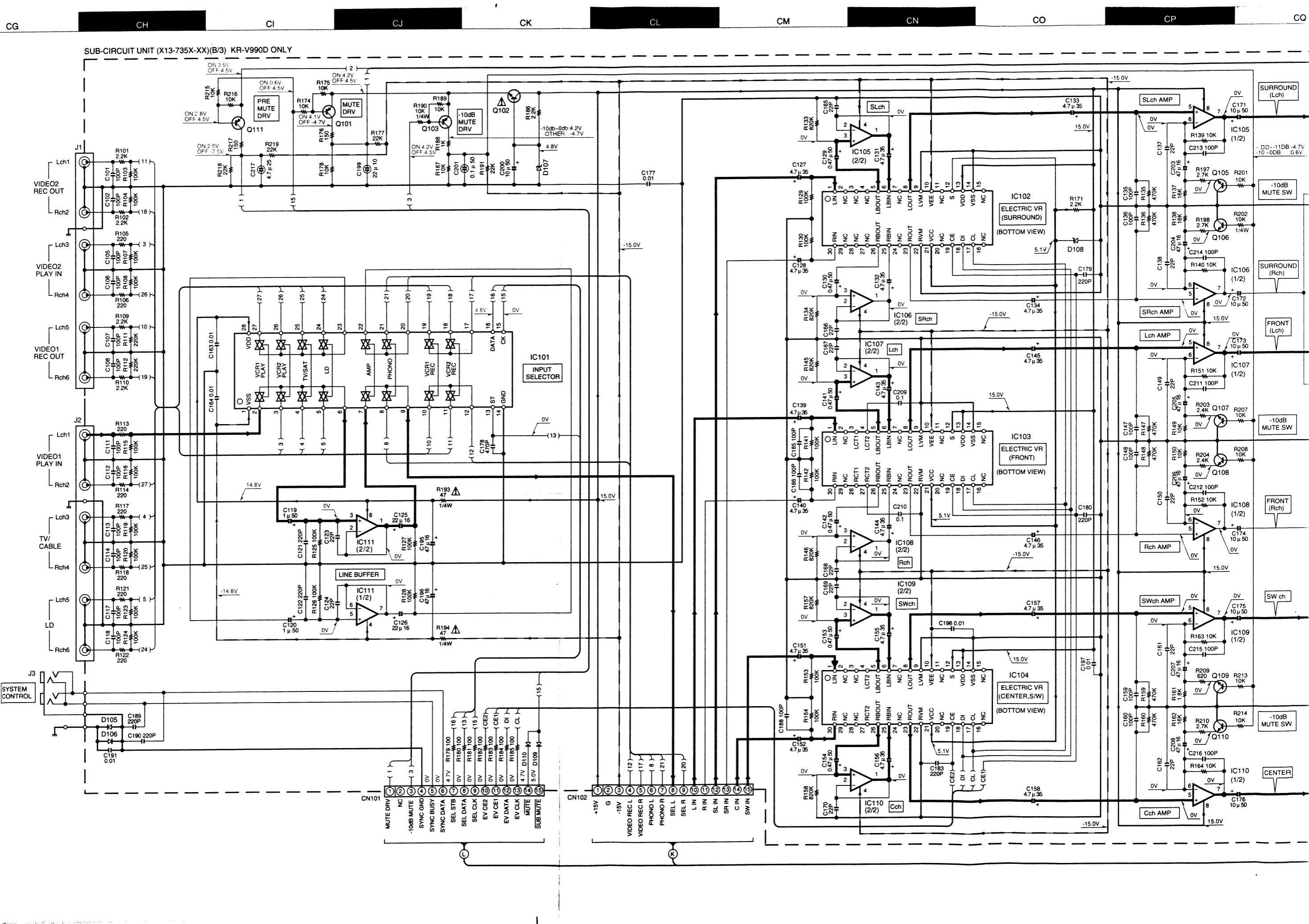
D107 : RD4.7ES(B)orHZS4.7N(B)

D108 : RD5.1ES(B)orZS5.1N(B)

D209 : S511ES(B)orISS130

D210 : RD15ES(B)orZS15N(B)

D211 : RD15ES(B)orHZS15N(B)



CQ

CR

CS

CT

CU

CV

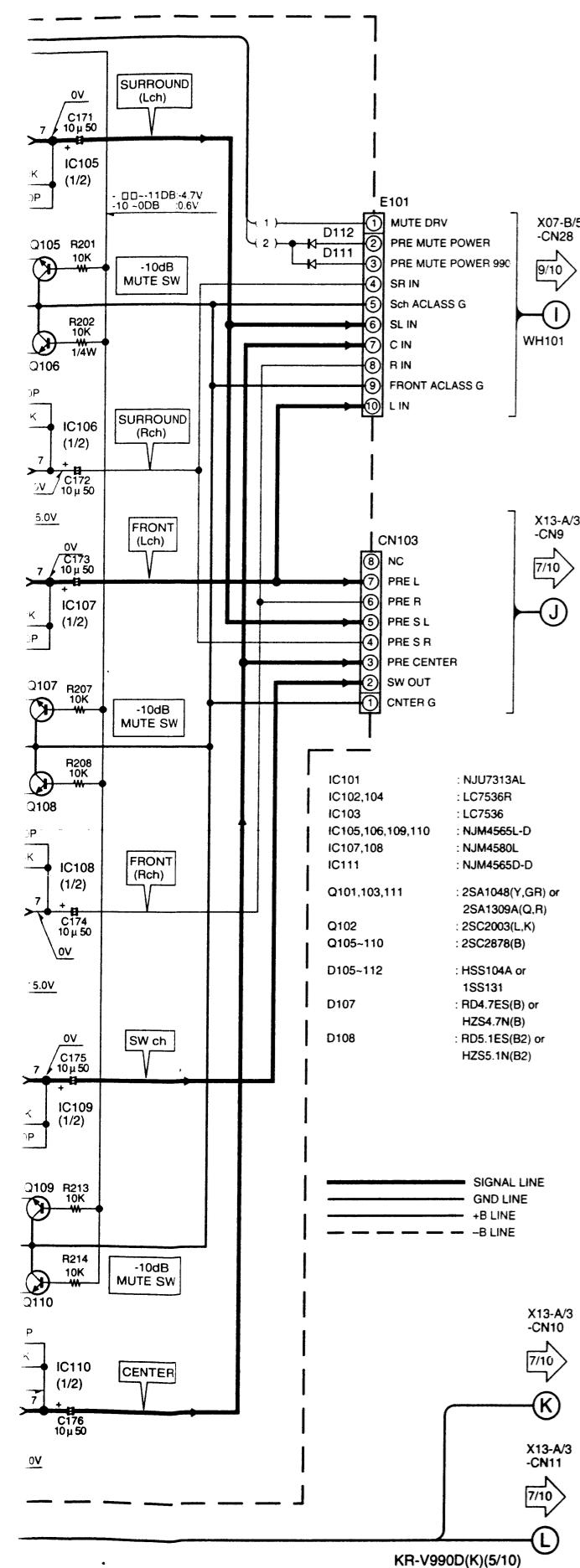
CW

CX

CY

CZ

DA



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. Noise reduction circuit made under license from Dolby Laboratories Licensing Corporation.

IC101 : NJU7313AL
 IC102,104 : LC7536R
 IC103 : LC7536
 IC105,106,109,110 : NJM4565L-D
 IC107,108 : NJM4580L
 IC111 : NJM4565D-D

Q101,103,111 : 2SA1048(Y,GR) or
 2SA1309A(Q,R)
 Q102 : 2SC2003(L,K)
 Q105-110 : 2SC2878(B)

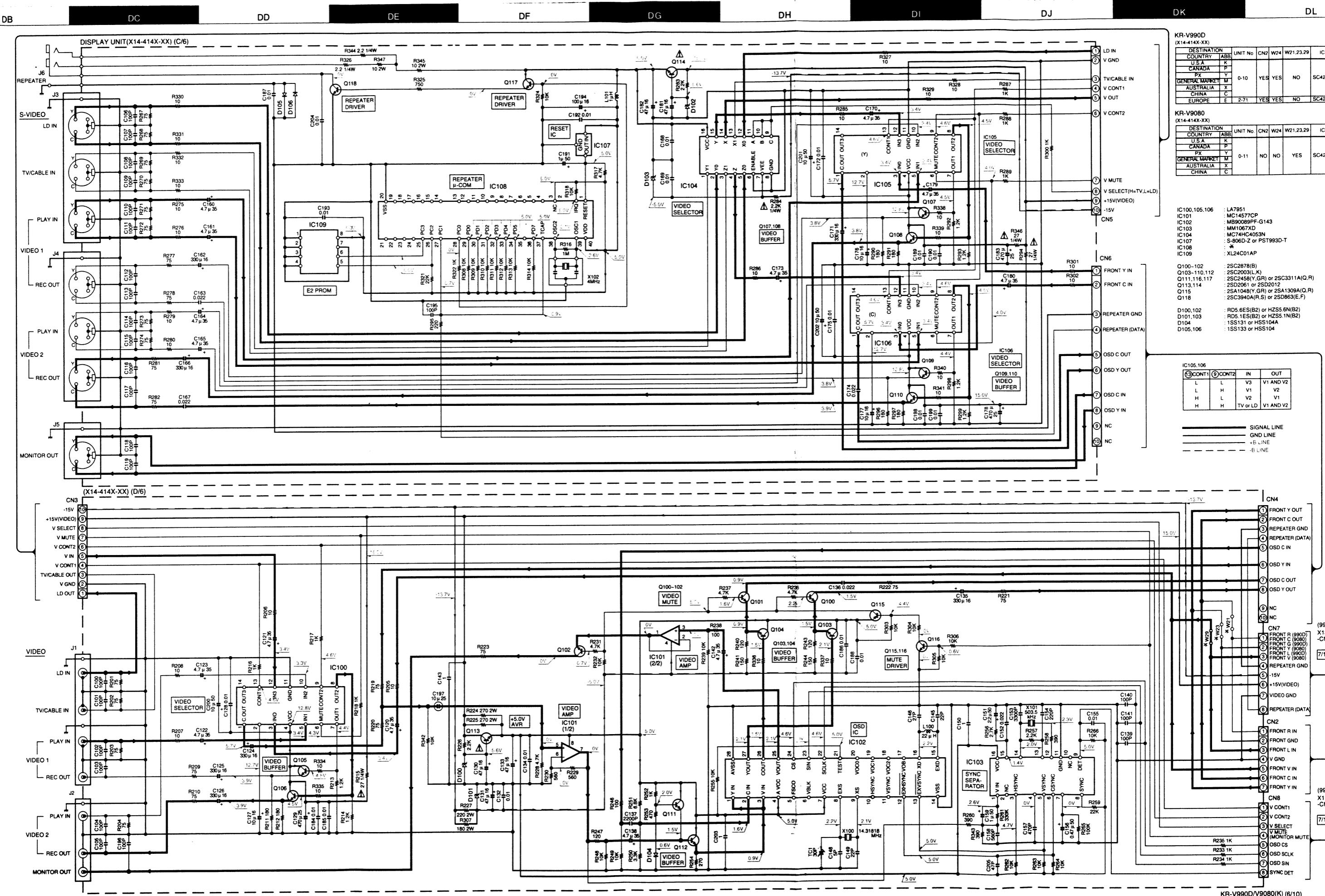
D105-112 : HSS104A or
 1SS131

D107 : RD4.7ES(B) or
 HZS4.7N(B)

D108 : RD5.1ES(B2) or
 HZS5.1N(B2)

SIGNAL LINE
 GND LINE
 +B LINE
 -B LINE

Y05-3070-10
 KR-V990D/V90
 KENWOOD



DL

DM

DN

DO

DP

DQ

DR

DS

DT

DU

DV

UNIT No.	CN2	W24	W21.23.29	IC108
X D Y M X C 2-71	YES	YES	NO	SC427202P
	YES	YES	NO	SC427203P

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

UNIT No.	CN2	W24	W21.23.29	IC108
X D Y M X C 0-11	NO	NO	YES	SC427202P

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
AM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

LA7951
MC14577CP
MB90089PF-G143
MC1067AD
MC74HC4053N
S-8060-Z or PST993D-T
XL24C01AP

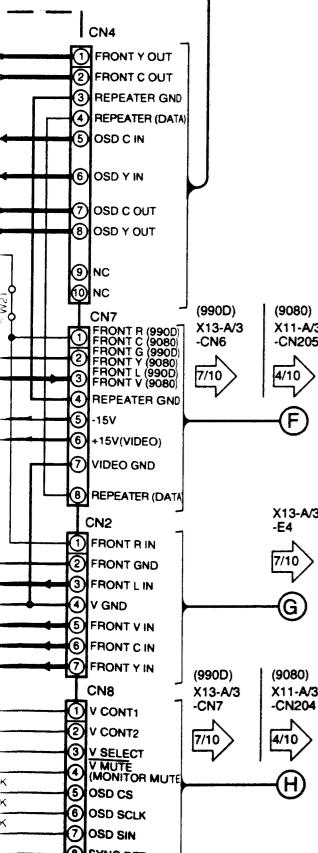
2SC2878(B)
2SC2003(L,K)
2SC2458(Y,GR) or 2SC3311A(Q,R)
2SD2061 or 2SD2012
2SA1048(Y,GR) or 2SA1309A(Q,R)
2SC3940A(R,S) or 2SD863(E,F)

RDS 6ES(B2) or HZ55.6N(B2)
RDS 1ES(B2) or HZ55.1N(B2)
1SS131 or HSS104A
1SS133 or HSS104

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WT2	IN	OUT
V3	V1 AND V2	
V1	V2	
V2	V1	
TV or LD	V1 AND V2	

SIGNAL LINE
GND LINE
+6 LINE
-6 LINE

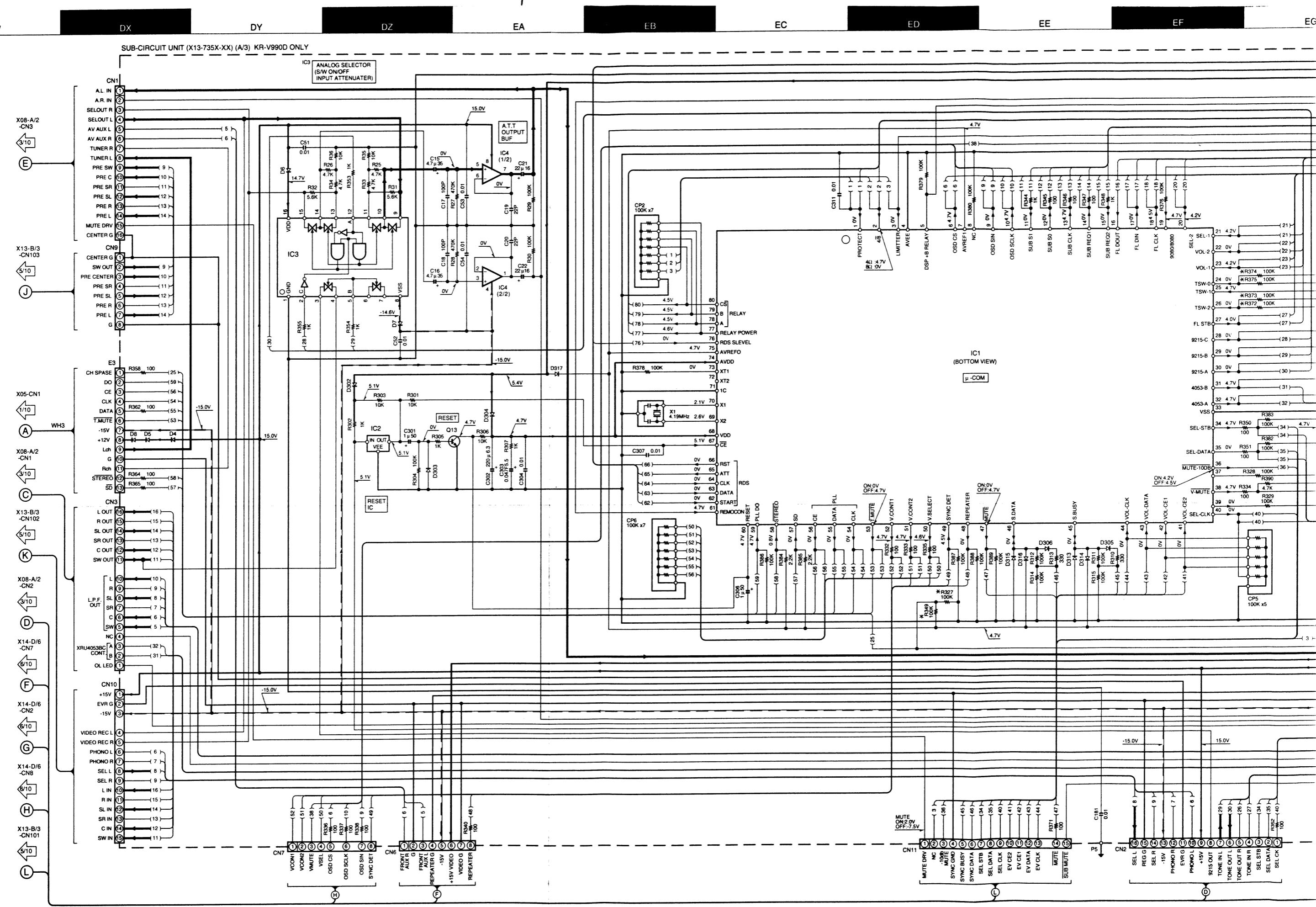


V990D/V9080(K) (6/10)

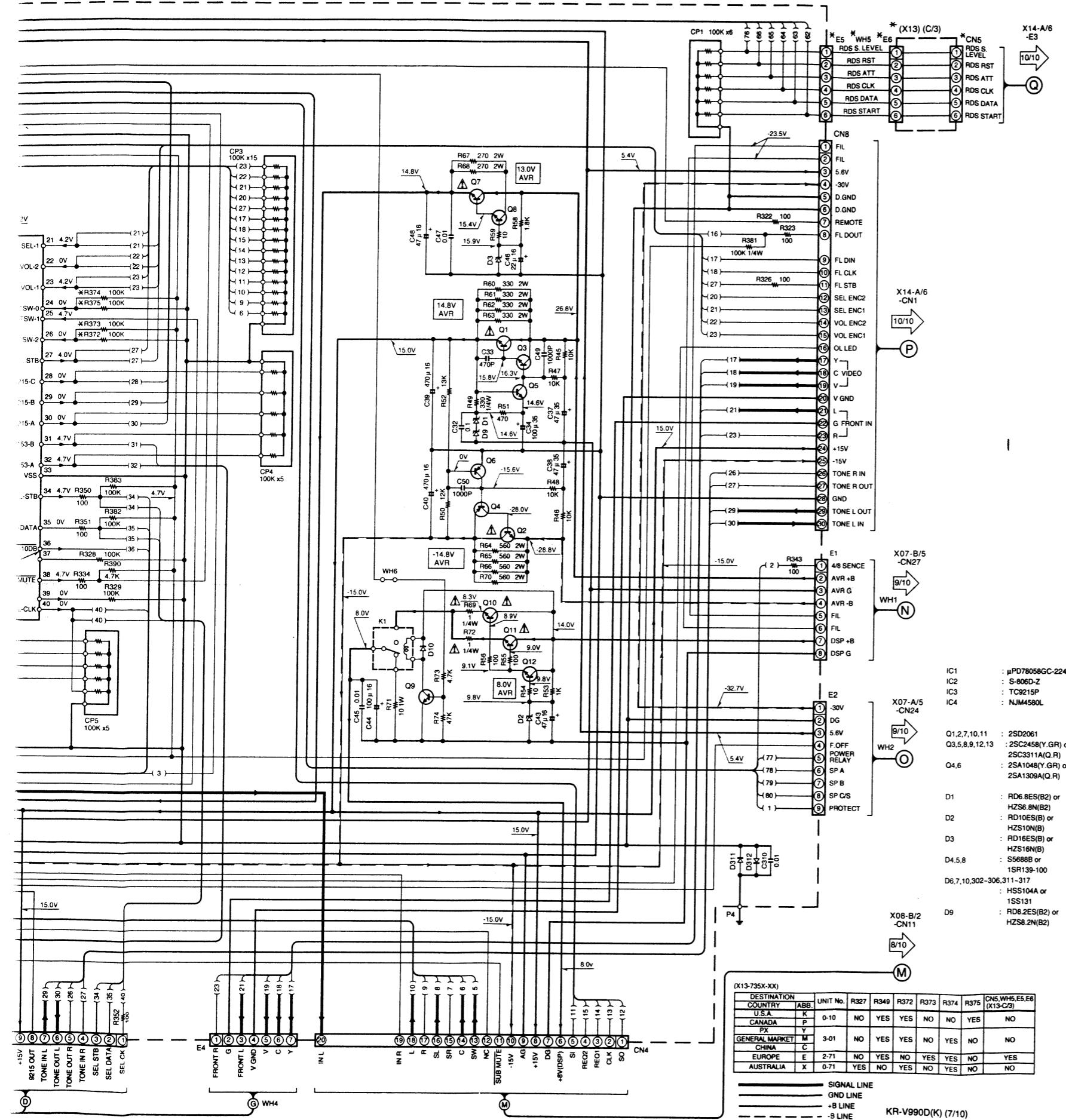
KR-V990D/V90

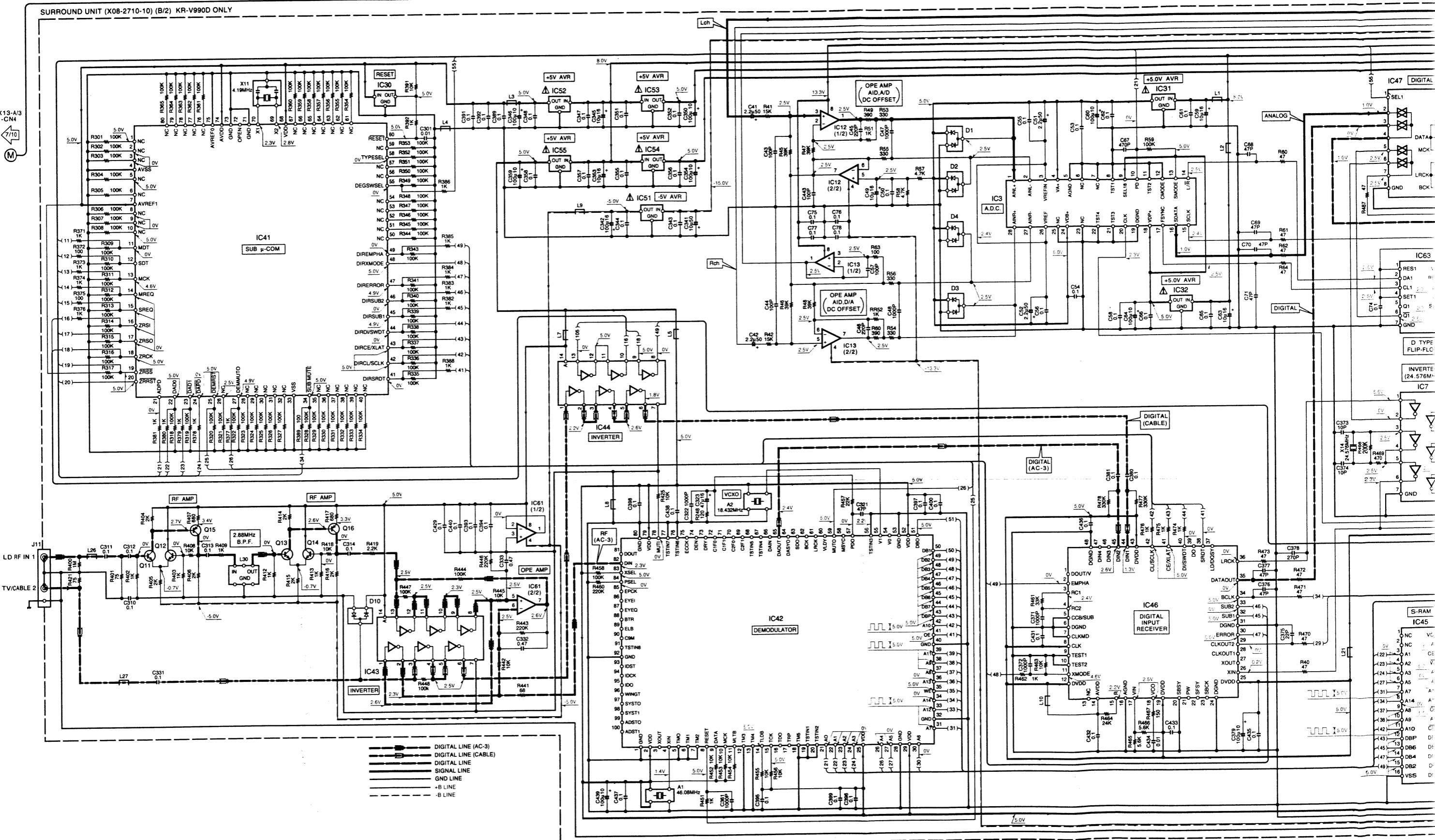
KENWOOD

Y05-3070-10



EG EH EI EJ EK EL EM EN EO EP

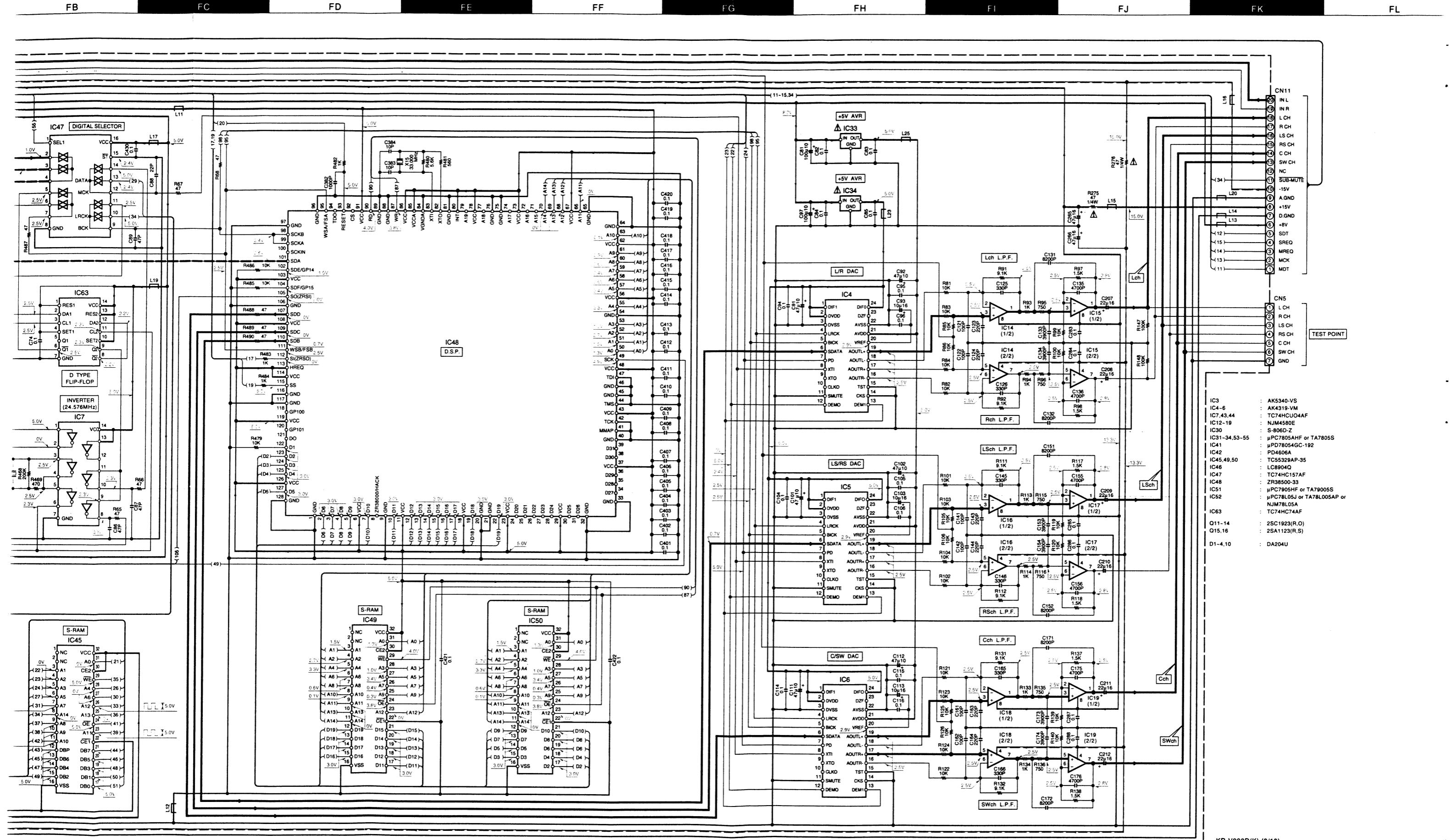




CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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MODE	CARRIER	FRE
FM	98MHz	
AM	100(999)kHz	4



KR-V990D(K) (8/10)

CARRIER	MODULATION		ANT INPUT
	FREQUENCY	DEVIATION	
98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
100(999)kHz	400Hz	MONO 30% MOD	60dB

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Y05-3070-10

KR-V990D-V908C
KENWOOD

FM

FN

FO

FP

FQ

FR

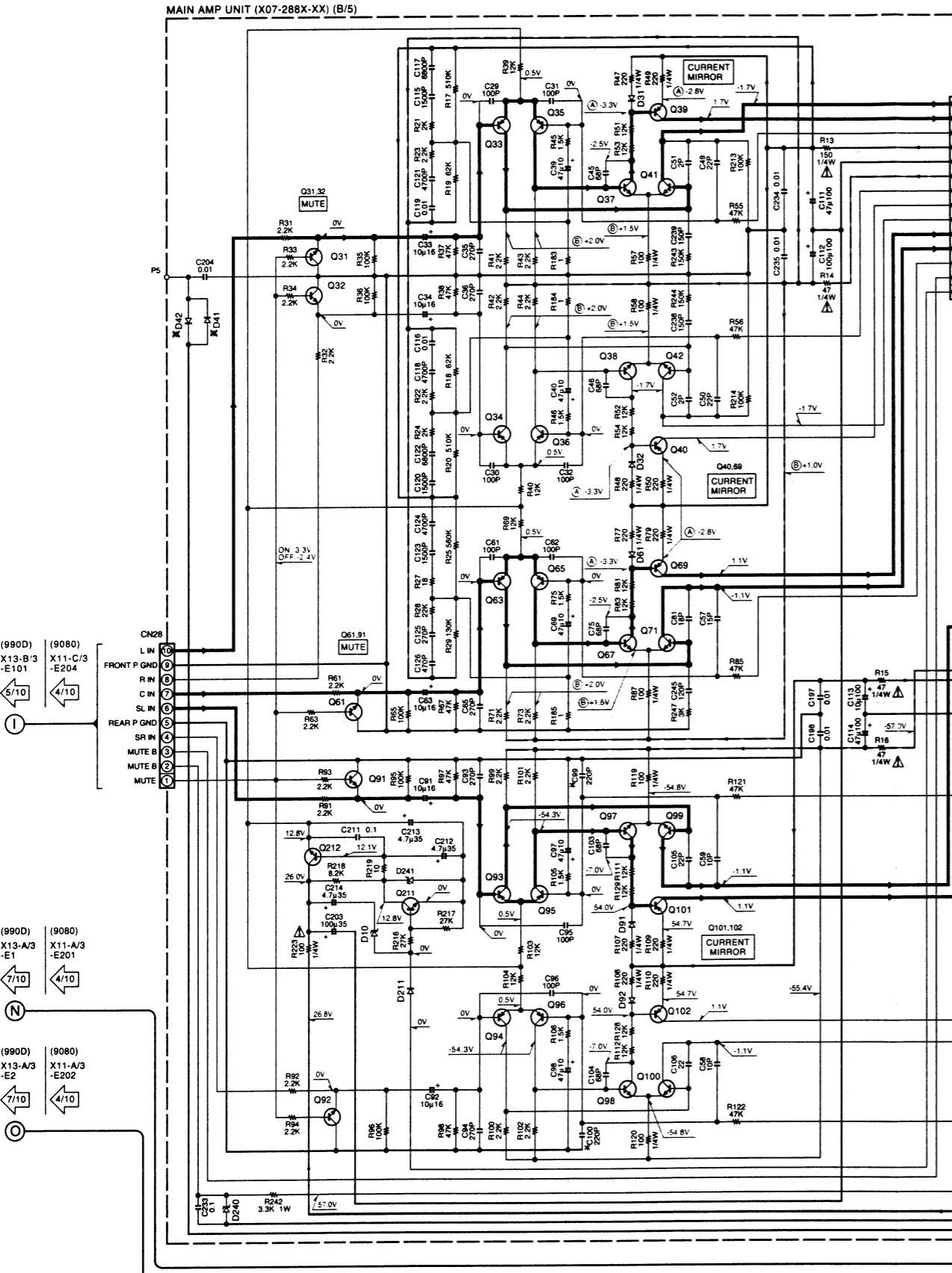
FS

FT

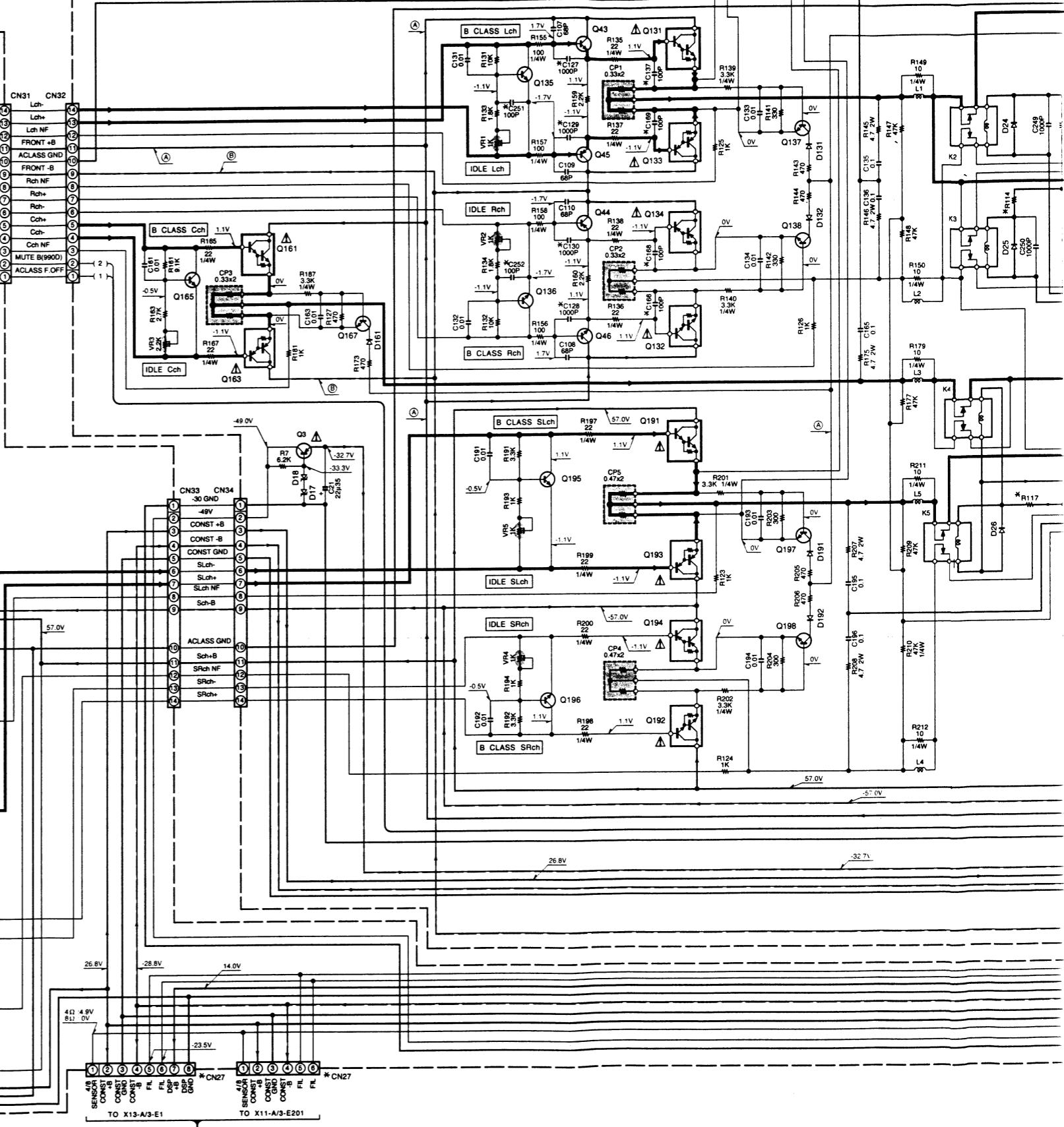
FU

FV

FW



(X07-288X-XX) (A/5)



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

MODE	CARRIER	MODULAT	
		FREQUENCY	L
FM	98MHz	1kHz	STEREO 6
AM	1000(999)kHz	400Hz	MONO 30'

FW

FX

FY

FZ

GA

GB

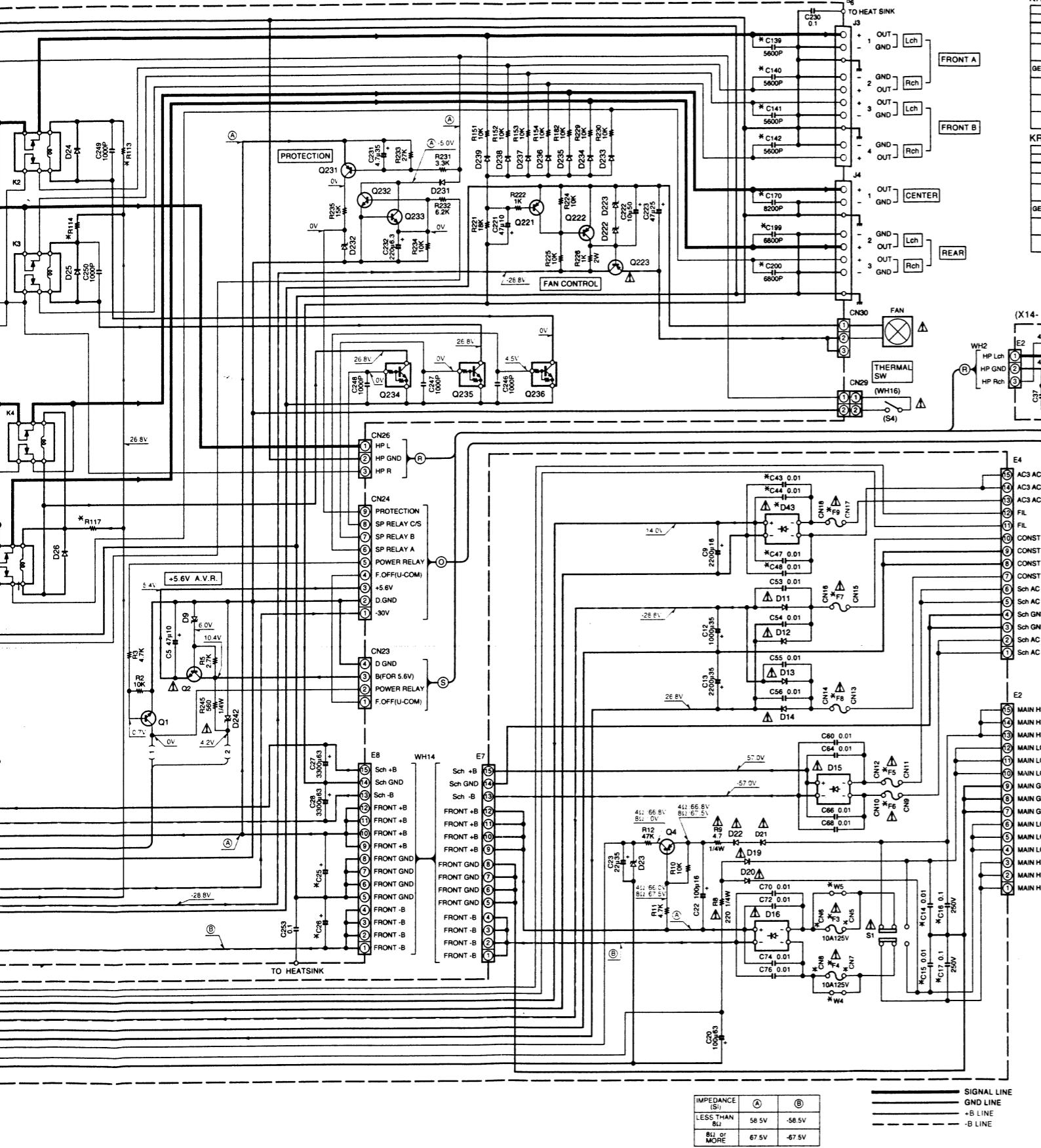
GC

GD

GE

GF

GG



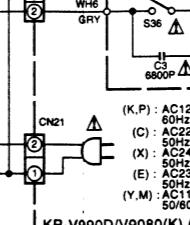
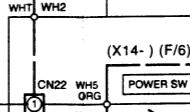
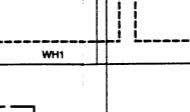
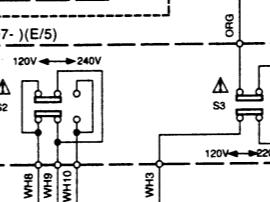
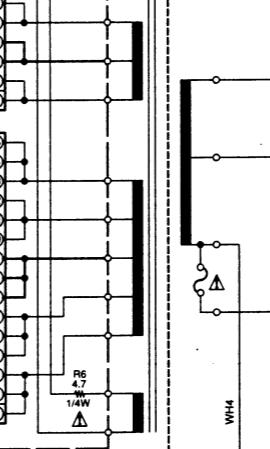
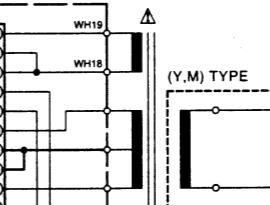
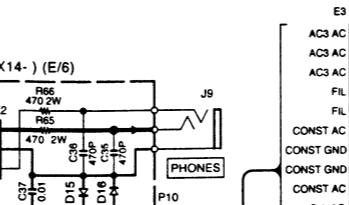
KR-V990D

DESTINATION COUNTRY	UNIT No.	F1	F2	F3.4	F5.6	F7.8	F9	CN3.4	CN5-8	C14-17	C25.26	C43.44.47.48.137.166	C99.100.139-142.166.169.251.252	C127	C27	R1	R113.114.117	W1	W2	W3	W4.5	
U.S.A.	K X07-2880-10	10A	NO	YES	5A	2A	1.8A	NO	YES	NO				NO		YES	10 1/4W	YES	NO	YES	NO	
CANADA	P X07-2882-81	125V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	YES	NO	YES				NO		NO	33 1/4W	NO	NO	YES	YES	
PX	Y X07-2882-91	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	YES				NO		NO	10 1/4W	YES	NO	YES	YES	
GENERAL MARKET	M X07-2880-21													YES		NO	8pin					
AUSTRALIA	X X07-2880-71	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	YES	NO	NO				NO		NO	10 1/4W	YES	NO	YES	YES	
EUROPE	E X07-2882-71	250V	T2.5AL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	YES				NO		NO	10 1/4W	YES	NO	YES	YES	
CHINA	C X07-2883-01	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	YES				NO		NO	10 1/4W	YES	NO	YES	YES	

KR-V980

DESTINATION COUNTRY	UNIT No.	F1	F2	F3.4	F5.6	F7.8	F9	CN3.4	CN5-8	C14-17	C25.26	C43.44.47.48.137.166	C99.100.139-142.166.169.251.252	C127	C27	R1	R113.114.117	W1	W2	W3	W4.5	
U.S.A.	K X07-2880-11	10A	NO	YES	5A	2A	1.8A	NO	YES	NO				NO		YES	10 1/4W	YES	NO	YES	NO	
CANADA	P X07-2882-92	125V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	YES	NO	YES				NO		NO	33 1/4W	NO	NO	YES	YES	
PX	Y X07-2882-92	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	YES				NO		NO	10 1/4W	YES	NO	YES	YES	
GENERAL MARKET	M X07-2880-22													NO		NO	6pin					
AUSTRALIA	X X07-2880-72	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	NO				NO		NO	10 1/4W	YES	NO	YES	YES	
CHINA	C X07-2883-02	250V	TSAL 250V	NO	NO	T4AL 250V	T1.6AL 250V	NO	NO	YES				NO		NO	10 1/4W	YES	NO	YES	YES	

(X07-) (D/5)



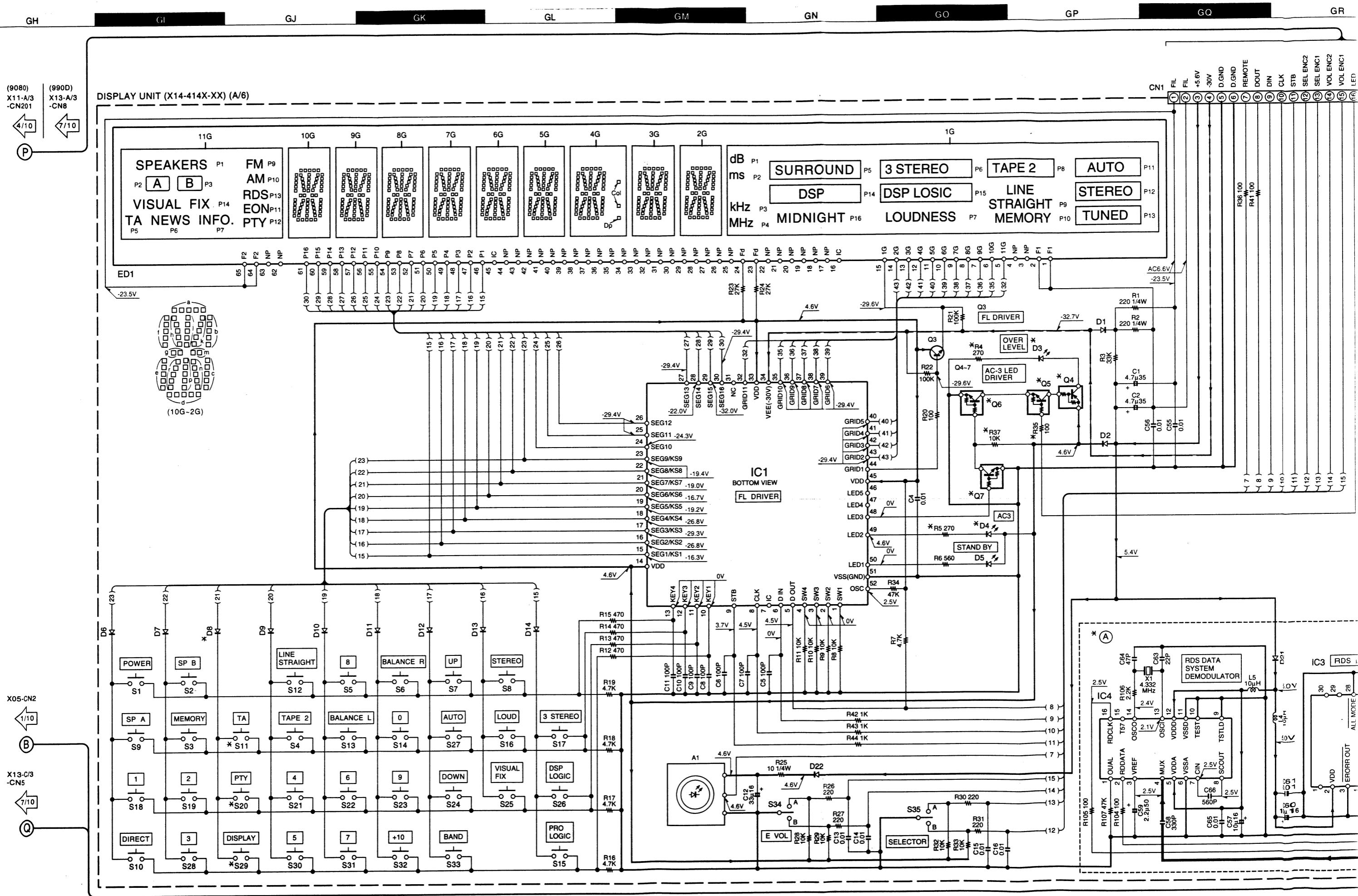
KR-V990D/V980(K) (9/10)

- O1 : 2SC2003(L,K)
- O2 : 2SC3940A(R,S)
- O3 : 2SA1534A(R,S)
- O4.33-36.63.65.93-96.101.102.21.231 : 2SA992(F,E)
- Q31.32.61.91.92 : 2SC2878(B)
- Q37.38.41-43.46.67.71 : 2SC2631(R,S)
- Q39.40.44.45.69 : 2SA1123(R,S)
- Q97-100.137.138.167.197.198.232.233 : 2SC1845(F,E)
- O131.132.161 : 2SD2222
- O133.134.163 : 2SB1470
- O135.136.165.195.196 : 2SC4137(W,W)
- O191.192 : 2SD2389
- O193.194 : 2SB1559
- O211.212 : 2SC2458(Y,G.R) or 2SC311A(O,R)
- Q222 : 2SA1048(Y,G.R) or 2SA1309(A,Q,R)
- Q223 : 2SB1375 or 2SB1370
- Q234-236 : UN4219 or DTC113ZS

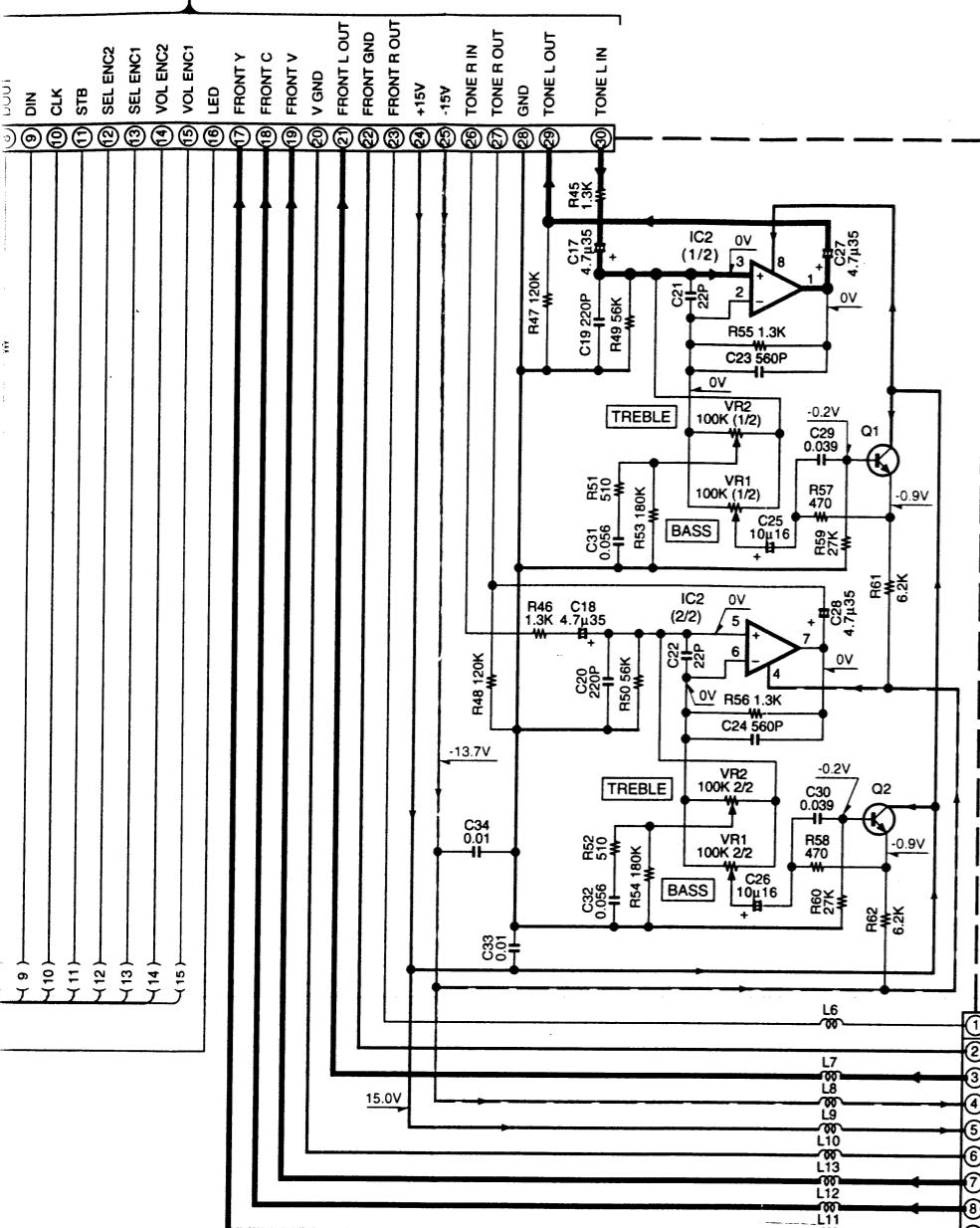
- D1.24-27.41.42.211.233-239 : 1S133 or HSS104
- D2.3.21.22.31.32.61.91.92.131.132.161.191.192.231 : 1SS131 or HSS104A
- D4-7.11-14.19.20 : SS568B or 1SR139-100
- D8 : RD2.7ES(B2) or HZS2.7N(B2)
- D9 : RD6.2ES(B2) or HZS6.2N(B2)
- D10.223 : RD8.2ES(B2) or HZS8.2N(B2)
- D15.43 : DSSBA20F03
- D16 : DSFB20-4002-L1
- D17.222 : RD16ES(B2) or HZS16N(B2)
- D18 : RD18ES(B2) or HZS18N(B2)
- D23 : RD5.1ES(B2) or HZS5.1N(B2)
- D232 : RD4.7ES(B2) or HZS4.7N(B2)
- D240.242 : RD3.9ES(B2) or HZS3.9N(B2)
- D241 : RD13ES(B2) or HZS13N(B2)

KR-V990D/V9
KENWOOD

Y05-3070-10



GR GS GT GU GV GW GX GY GZ HA HB



KR-V990D
(X14-414X-XX)

DESTINATION	COUNTRY	ABB.	UNIT No.	A	D3,4	D8	S11.20.29	Q4-7	R4.5,35.37
U.S.A.	K	P	0-10	NO	YES	NO	NO	YES	YES
CANADA	P								
PX	Y								
GENERAL MARKET	M								
AUSTRALIA	X								
CHINA	C								
EUROPE	E		2-71	YES	YES	YES	YES	YES	YES

KR-V9080
(X14-414X-XX)

DESTINATION	COUNTRY	ABB.	UNIT No.	A	D3,4	D8	S11.20.29	Q4-7	R4.5,35.37
U.S.A.	K	P	0-11	NO	NO	NO	NO	NO	NO
CANADA	P								
PX	Y								
GENERAL MARKET	M								
AUSTRALIA	X								
CHINA	C								

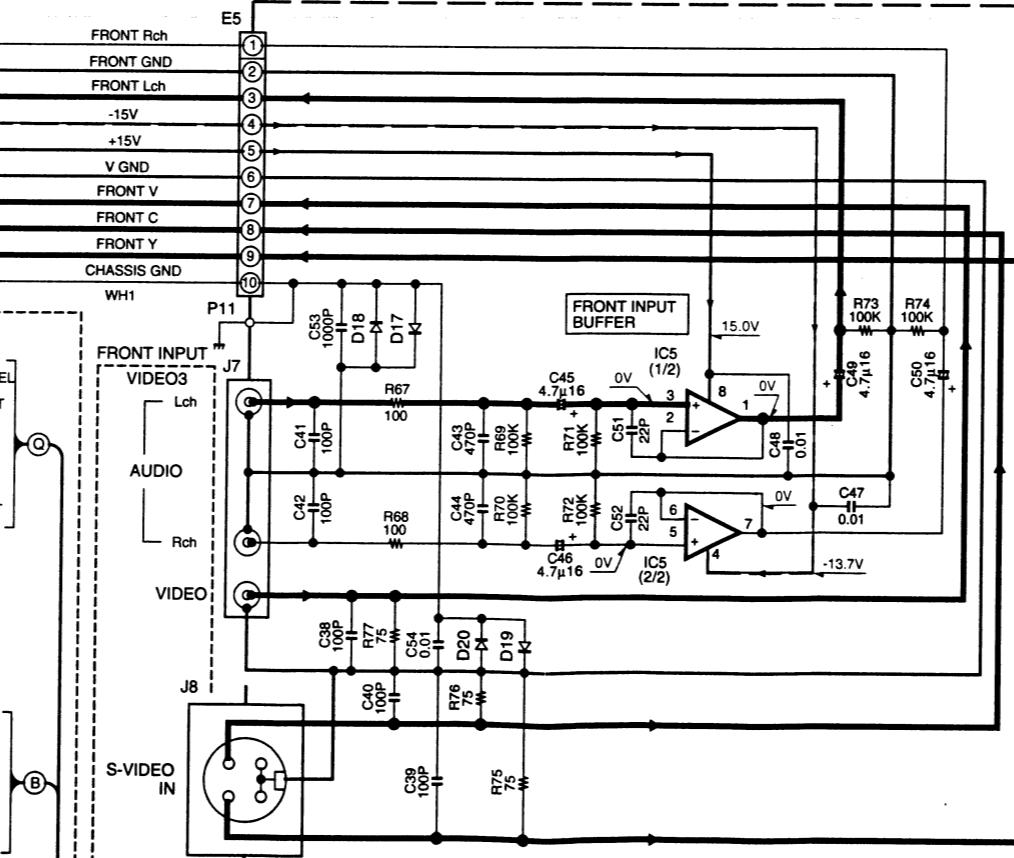
IC1 : μPD16311
IC2 : NJM4580D-D
IC3 : LC6543H-4D68
IC4 : SAA6579
IC5 : NJM4565L-D

Q1-3 : 2SC2458(Y,GR) or 2SC3311A(Q,R)
Q4 : UN4119 or DTA113ZS
Q5-7 : UN4219 or DTC113ZS

D1 : RD8.2ES(B2) or HZS8.2N(B2)
D2,6-14,21,22 : 1SS131 or HSS104A
D3,4 : B30-1291-05
D5 : B30-1290-05
D17-20 : 1SS133 or HSS104

ED1 : 11-MT-103GK

(X14-414X-XX) (B/6)



KR-V990D/V9080(K) (10/10)

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

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MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

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KR-V990D-V9080

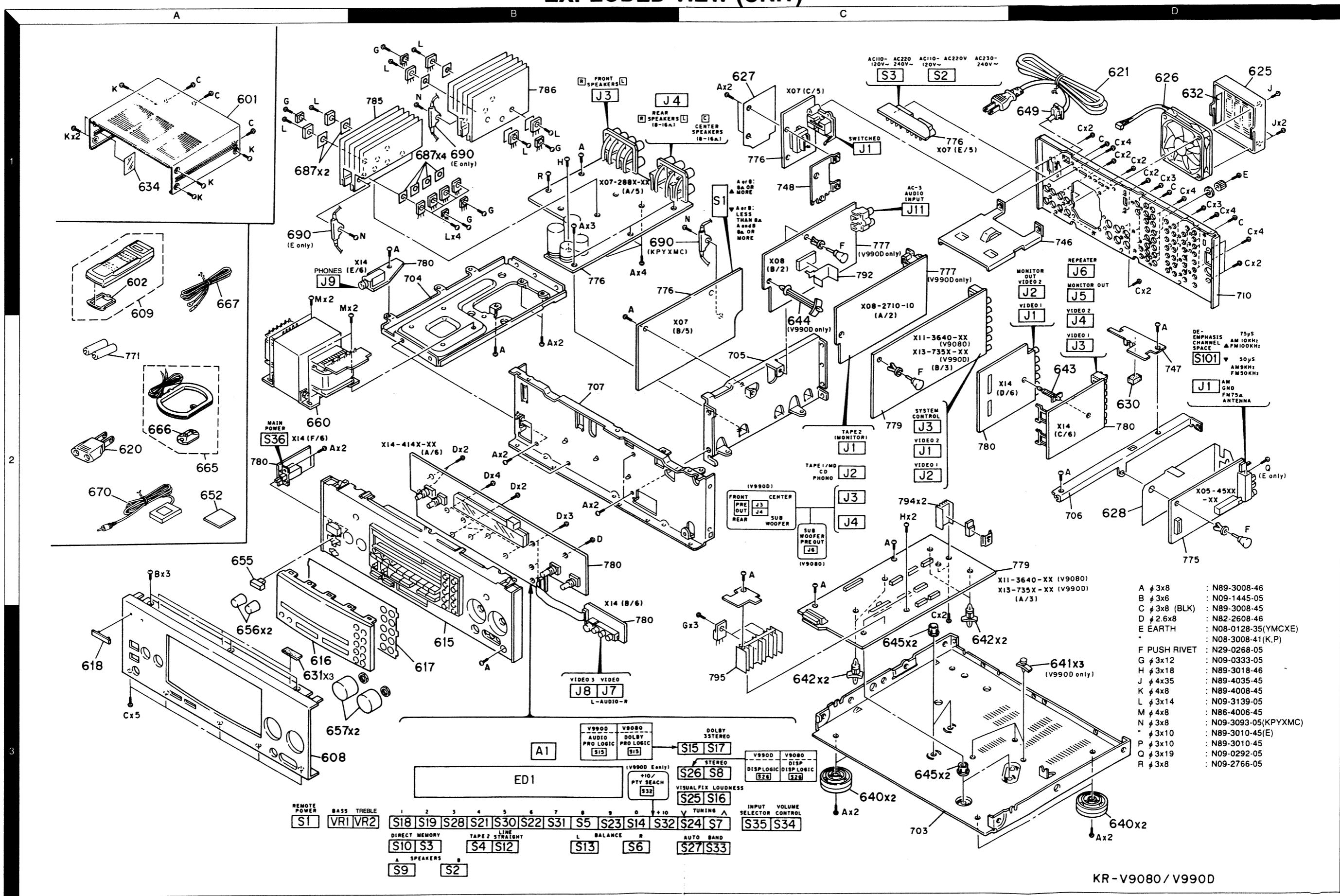
KENWOOD

Y05-3070-10

KR-V990D/V9080

EXPLODED VIEW (UNIT)

KR-V990D/V9080



KR-V990D/V9080

PARTS LIST

Ref. No	Add- ress Parts	New Parts	Parts No.	Description	Desti- nation	Re- marks
KR-V990D/V9080						
601	1A	*	A01-3271-01	METALLIC CABINET	YXEMC	
601	1A	*	A01-3283-01	METALLIC CABINET	KPY	D
602	1A	*	A01-0869-08	BATTERY COVER	KPY	
608	3A	*	A60-0798-22	PANEL	KPY	9
608	3A	*	A60-0802-22	PANEL	XMC	9
608	3A	*	A60-0820-22	PANEL	E	D
608	3A	*	A60-0833-22	PANEL	XMC	D
608	3A	*	A70-1038-05	REMO-CON ASSY (RC-R0903)	KPY	
615	3B	*	B01-0525-01	PANEL ESCUTCHEON	KPYXMC	
615	3B	*	B01-0527-01	PANEL ESCUTCHEON	KPYXMC	D
616	3A	*	B10-2171-02	FRONT GLASS	E	D
616	3A	*	B10-2172-02	FRONT GLASS	E	9
616	3A	*	B10-2222-02	FRONT GLASS	E	D
617	3B	*	B11-0285-03	COLOR FILTER	KY	
618	3A	*	B43-0302-04	KENWOOD BADGE	KY	
-	-	*	B46-0082-43	WARRANTY CARD	X	
-	-	*	B46-0096-53	WARRANTY CARD	P	
-	-	*	B46-0121-33	WARRANTY CARD		
		*	B46-0197-00	QUESTIONNAIRE CARD	K	
		*	B46-0310-03	WARRANTY CARD	E	
		*	B46-0326-03	WARRANTY CARD	C	
		*	B58-0964-13	CAUTION CARD (CAUTION UL) (TX TYPE PL)	KY	
		*	B58-0965-13	CAUTION CARD (CAUTION UL) (TX TYPE PL)	X	
		*	B58-0966-13	CAUTION CARD (ELM TYPE PL)	EMC	
		*	B58-0967-03	CAUTION CARD (P TYPE PL)	P	
		*	B58-0968-04	CAUTION CARD	Y	
		*	B59-1104-00	SERVICE DIRECTORY	Y	
		*	B60-2390-10	INST.MANUAL (KR-V990D EN)	KPYXMC	D
		*	B60-2391-10	INST.MANUAL (KR-V990D FR)	P	
		*	B60-2392-00	INST.MANUAL (KR-V990D C)	MC	
		*	B60-2393-10	INST.MANUAL (KR-V990D SP)	E	
		*	B60-2394-00	INST.MANUAL (KR-V990D TAIWAN)	M	
		*	B60-2499-10	INST.MANUAL (KR-V990D FR/D)	M	
		*	B60-2500-10	INST.MANUAL (KR-V990D GER)	E	D
		*	B60-2501-10	INST.MANUAL (CARD/KR-V9080 SP)	M	9
		*	B60-2503-10	I.MANUAL (CARD/KR-V9080 EN)	M	9
		*	B60-2504-10	I.MANUAL (CARD/KR-V9080 EN)	M	9
		*	B60-2505-10	I.MANUAL (CARD/KR-V9080 D)	P	9
		*	B60-2506-10	I.MANUAL (CARD/KR-V990D FR)	E	D
		*	B60-2507-10	I.MANUAL (CARD/KR-V9080 C)	MC	9
		*	B60-2508-10	I.MANUAL (CARD/KR-V9080 C)	MC	D
		*	B60-2509-10	INST.MANUAL (KR-V9080 EN)	P	9
		*	B60-2510-00	INST.MANUAL (KR-V9080 FR)	P	9
		*	B60-2512-10	INST.MANUAL (CARD/KR-V9080 SP)	M	9
		*	B60-2513-10	INST.MANUAL (CARD/KR-V9080 FR)	P	9
		*	B60-2514-00	INST.MANUAL (KR-V9080 SP)	MC	9
		*	B60-2515-00	INST.MANUAL (KR-V9080 C)	M	9
		*	B60-2516-00	INST.MANUAL (KR-V9080 TAIWAN)	M	9

TUNER UNIT (X05-4532-75) EUROPE type only						
	Add. ress Parts	New Parts	Parts No.	Description	Desti- nation	Re- marks
2A	*	J19-3645-05		ANTENNA STAND		
1A	*	190-0810-05		HEAD WIRE ANTENNA		
2A	*	W02-2542-05		TRANSMITTING ASSY		

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KR-V990D/V9080

PARTS LIST

Ref. No	Add- ress	Parts No.	Parts No.	Description	Desti- nation	Re- marks
620	2A	E03-0115-05		AC PLUG ADAPTER	M	
621	1D	E30-2592-15		AC POWER CORD	M	
621	1D	E30-2739-05		AC POWER CORD	Y	KP
621	1D	E30-2787-05		AC POWER CORD	E	
621	1D	E30-2788-05		AC POWER CORD		
621	1D	E30-2790-05		AC POWER CORD	X	
621	1D	E30-2825-05		AC POWER CORD	C	
625	1D	F07-0769-13		COVER	KP	
626	1D	F09-0100-05		FAN	YXEMC	
626	1D	F09-0102-05		FAN	YXEMC	
627	1C	F20-1462-14		INSULATING BOARD		
628	2D	F20-1464-13		INSULATING BOARD		
630	2D	G11-0132-04		SOFT TAPE (15X10X8)	X	
631	3A	G11-0155-14		SOFT TAPE (40X9X2)		
632	1D	G11-1052-04		SOFT TAPE		
634	1A	G11-1167-04		SOFT TAPE		
-	-	H10-7101-12		POLYSTYRENE FOAMED FIXTURE (L)		
-	-	H10-7102-02		POLYSTYRENE FOAMED FIXTURE (R)		
-	-	H13-0223-04		CARTON BOARD		
-	-	H25-0232-04		PROTECTION BAG (235X350X0.03)		
-	-	H25-0661-04		PROTECTION BAG		
-	-	H50-1675-14		ITEM CARTON CASE (KR-V990D)	KPYXE	D
-	-	H50-1676-14		ITEM CARTON CASE (KR-V990)	M	D
-	-	H50-1678-14		ITEM CARTON CASE (KR-V990)	M	9
-	-	H50-1705-14		ITEM CARTON CASE (KR-V990)	M	9
-	-	H50-1884-14		ITEM CARTON CASE (KR-V990D)	C	D
-	-	H50-1885-14		ITEM CARTON CASE (KR-V990)	C	9
640	3C,3D	J02-1147-13		FOOT (D=46,H=18.5)		
641	3D	J19-3300-05		UNIT HOLDER	D	
642	3C	J19-3324-15		UNIT HOLDER	D	
643	2D	J19-3325-05		UNIT HOLDER	D	
644	1C	J19-3385-05		UNIT HOLDER	D	
645	3C	J19-3732-04		UNIT HOLDER		
649	1D	J42-0083-05		POWER CORD BUSHING		
652	2A	J69-0087-08		ADHESIVE DOUBLE-COATED TAPE		
-	-	J61-0098-05		WIRE BAND		
-	-	J61-0307-05		WIRE BAND		
655	2A	K27-2176-04		KNOB (BUTTON)	MC	
656	3A	K29-6249-04		KNOB	KP	
657	3A	K29-6251-04		KNOB	Y	
660	2A	L07-2038-05		POWER TRANSFORMER	D	
660	2A	L07-2039-05		POWER TRANSFORMER	D	
660	2A	L07-2040-05		POWER TRANSFORMER	D	
660	2A	L07-2041-05		POWER TRANSFORMER	D	
660	2A	L07-2043-05		POWER TRANSFORMER	D	
660	2A	L07-2044-05		POWER TRANSFORMER	D	
660	2A	L07-2064-05		POWER TRANSFORMER	D	
660	2A	L07-2103-05		POWER TRANSFORMER	D	
660	2A	L07-2104-05		POWER TRANSFORMER	D	
660	2A	L07-2145-05		POWER TRANSFORMER	D	
665	2A	L07-2147-05		LOOP ANTENNA	M	9
		T90-0820-05				

③	Dept- name	Re- marks		
			only	

Ref. No.	Parts No.	Parts No.	Description	Designation	Remarks
CN1	E40-4234-05		FLAT CABLE CONNECTOR (13P)		
CN2	E40-4295-05		FLAT CABLE CONNECTOR (5P)		
J1	E70-0025-05		LOCK TERMINAL BOARD(ANTENNA)		
CF1, 2	L72-0536-05		CERAMIC FILTER		
L1, 2	L79-1219-05		LC FILTER		
L3	L30-0910-05		LC FILTER		
L5	L79-0125-05		LC FILTER		
L6	L39-1328-05		COMBINATION COIL		
L7	L30-0467-05		AM IFT		
L8, 9	L40-1091-17		SMALL FIXED INDUCTOR(1UH)		
L11	L40-1001-17		SMALL FIXED INDUCTOR(10UH)		
X1	L77-2159-05		CRYSTAL RESONATOR(7.2MHZ)		
X2	L78-0295-05		CRYSTAL RESONATOR (456KHZ)		
R1	RK73FB2A681J	CHIP R	680	1/10W	
R2	RK73FB2A332J	CHIP R	3.3K	1/10W	
R3	RK73FB2A331J	CHIP R	300	1/10W	
R4	RK73FB2A100J	CHIP R	10	1/10W	
R5	RK73FB2A101J	CHIP R	100	1/10W	
R6	RK73FB2A331J	CHIP R	380	1/10W	
R7	RK73FB2A332J	CHIP R	3.9K	1/10W	
R8	RK73FB2A222J	CHIP R	3.3K	1/10W	
R9	RK73FB2A473J	CHIP R	2.2K	1/10W	
R10	RK73FB2A473J	CHIP R	4.7K	1/10W	
R11	RK73FB2A562J	CHIP R	5.6K	1/10W	
R12	RK73FB2A302J	CHIP R	3.0K	1/10W	
R13	RK73FB2A393J	CHIP R	39K	1/10W	
R14	RK73FB2A472J	CHIP R	4.7K	1/10W	
R15	RK73FB2A473J	CHIP R	47K	1/10W	
R16	RK73FB2A104J	CHIP R	100K	1/10W	
R17	RK73FB2A392J	CHIP R	3.9K	1/10W	
R18	RK73FB2A335J	CHIP R	38K	1/10W	
R19	RK73FB2A122J	CHIP R	2.2K	1/10W	
R20	RK73FB2A122J	CHIP R	1.2K	1/10W	
R21, 22	RK73FB2A472J	CHIP R	4.7K	1/10W	
R23, 24	RK73FB2A561J	CHIP R	560	1/10W	
R25	RK73FB2A472J	CHIP R	4.7K	1/10W	
R26	RK73FB2A473J	CHIP R	47K	1/10W	
R27	RK73FB2A821J	CHIP R	820	1/10W	
R28	RK73FB2A472J	CHIP R	4.7K	1/10W	
R29, 30	RK73FB2A102J	CHIP R	1.0K	1/10W	
R31	RK73FB2A562J	CHIP R	8.2K	1/10W	
R32, 35	RK73FB2A472J	CHIP R	4.7K	1/10W	
R36, 38	RK73FB2A102J	CHIP R	1.0K	1/10W	
R39	RK73FB2A822J	CHIP R	8.2K	1/10W	
R40	RK73FB2A71J	CHIP R	470	1/10W	
R41	RK73FB2A821J	CHIP R	820	1/10W	
R42	RD14NB2E10J	RD	100	1/4W	
R43	RK73FB2A103J	CHIP R	10K	1/10W	
R44	RK73FB2B221J	CHIP R	220	1/8W	
R45	RK73FB2A122J	CHIP R	1.2K	1/10W	
R46	RK73FB2A750J	CHIP R	75	1/10W	
R47	RK73FB2A681J	CHIP R	680	1/10W	
R48	RK73FB2A621J	CHIP R	620	1/10W	
R49	RK73FB2A104J	CHIP R	100K	1/10W	
R50	RK73FB2A471J	CHIP R	470	1/10W	

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3	Deg- nation	Re- marks	
	only		

4	Re- marks	Desig- nation	Detai- lition	Description

Ref. No	Add.-res	New Parts	Parts No.	Description
CN1			E40-4234-05	FLAT CABLE CONNECTOR
CN2			E40-4295-05	FLAT CABLE CONNECTOR
J1			E70-0052-05	LOCK TERMINAL BOARD
CF1 .2			L72-0536-05	CERAMIC FILTER
L1 .2			L79-1219-05	LC FILTER
L3			L30-0910-05	FM IFT
L5			L79-1328-05	LC FILTER
L6			L30-0467-05	COMBINATION COIL
L7			L40-1091-17	AM IFT
L8 .9		*	L40-1001-05	SMALL FIXED INDUC.
L11			L77-2159-05	SMALL FIXED INDUC.
X1			L78-0295-05	CRYSTAL RESONATOR
X2			L78-0295-05	RESONATOR
R1			RK73FB2A468J	CHIP R
R2			RK73FB2A332J	CHIP R
R3			RK73FB2A331J	CHIP R
R4			RK73FB2A100J	CHIP R
R5			RK73FB2A101J	CHIP R
R6			RK73FB2A331J	CHIP R
R7			RK73FB2A392J	CHIP R
R8			RK73FB2A332J	CHIP R
R9			RK73FB2A222J	CHIP R
R10			RK73FB2A473J	CHIP R
R11			RK73FB2A562J	CHIP R
R12			RK73FB2A302J	CHIP R
R13			RK73FB2A392J	CHIP R
R14			RK73FB2A472J	CHIP R
R15			RK73FB2A473J	CHIP R
R16			RK73FB2A104J	CHIP R
R17			RK73FB2A392J	CHIP R
R18			RK73FB2A333J	CHIP R
R19	20		RK73FB2A222J	CHIP R
R21	.22		RK73FB2A122J	CHIP R
R23	.24		RK73FB2A472J	CHIP R
R25			RK73FB2A561J	CHIP R
R26			RK73FB2A442J	CHIP R
R27			RK73FB2A247J	CHIP R
R28			RK73FB2A382J	CHIP R
R29	.30		RK73FB2A102J	CHIP R
R31			RK73FB2A822J	CHIP R
R32	.35		RK73FB2A447J	CHIP R
R36	.38		RK73FB2A102J	CHIP R
R39			RK73FB2A822J	CHIP R
R40			RK73FB2A471J	CHIP R
R41			RK73FB2A482J	CHIP R
R42			RD14NB2E101J	RD
R43			RK73FB2A103J	CHIP R
R44			RK73EB2B222J	CHIP R
R45			RK73FB2A122J	CHIP R
R46			RK73FB2A750J	CHIP R
R47			RK73FB2A681J	CHIP R
R48			RK73FB2A621J	CHIP R
R49			RK73FB2A104J	CHIP R
R50			RK73FB2A471J	CHIP R

KR-V990D/V9080

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

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Ref. No.	Add- ress	New Parts	Parts No.	Description	Ref. No.	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
R1			RK73FB2A681J	CHIP R	Q1			2SC2714(R,O)	TRANSISTOR	R : Canada	D : KR-V990D
R2			RK73FB2A332J	CHIP R	Q2			2SC1845(F,E)	TRANSISTOR	E : Europe	9 : KR-V9080
R3			RK73FB2A331J	CHIP R	Q2			2SC2889(S,ES)	TRANSISTOR	T : Europe	
R4			RK73FB2A470J	CHIP R	Q3			2SC1740(SQ,R)	TRANSISTOR	X : Asia	
R6			RK73FB2A331J	CHIP R	Q3			2SC2785(F,E)	TRANSISTOR	A : Africa	
R11	▲		RK73FB2A820J	FL-PROOF RS	Q7			2SC2412K	TRANSISTOR	G : Germany	
R15			RK73FB2A391J	CHIP R	Q11			2SD863(F,E)	TRANSISTOR	C : China	
R19			RK73FB2A332J	CHIP R	Q102			2SA1037K	TRANSISTOR		
R21	:22		RK73FB2A393J	CHIP R	Q104			2SC1037K	TRANSISTOR	M : Other Areas	
R24			RK73FB2A102J	CHIP R	Q107,108			2SC2412K	TRANSISTOR		
R25			RK73FB2A103J	CHIP R	Q109,110			2SC2412K	TRANSISTOR		
R31			RK73FB2B3D221J	FL-PROOF RS	Q111			2SA1037K	TRANSISTOR		
R32	-37		RK73FB2A102J	CHIP R	DT1			W02-2512-05	FM FRONT-END ASSY		
R38			RK73FB2A822J	CHIP R							
R39			RK73FB2A102J	CHIP R							
R40			RK73FB2A102J	CHIP R							
R42			RK14BFB2E101J	RD							
R43			RK73FB2A103J	CHIP R							
R62			RK73FB2A72J	CHIP R							
R64			RK73FB2A104J	CHIP R							
R101,102			RK73FB2A333J	CHIP R							
R105,106			RK73FB2A123J	CHIP R							
R111			RK73FB2A470J	RD							
R118			RK73FB2A122J	CHIP R							
R119			RK73FB2A123J	CHIP R							
R122			RK73FB2A122J	CHIP R							
R123			RK73FB2A123J	CHIP R							
R124			RK73FB2A103J	CHIP R							
R125,126			RK73FB2A332J	CHIP R							
R127,128			RD14NB2E101J	RD							
R131,132			RK73FB2A393J	CHIP R							
R138,139			RK73FB2A561J	CHIP R							
R140,141			RK73FB2A473J	CHIP R							
R151			RK73FB2A821J	CHIP R							
R152			RK73FB2A473J	CHIP R							
R153			RK73FB2A472J	CHIP R							
R167			RK73FB2A102J	CHIP R							
W46			R92-0670-05	CHIP R							
W48			R92-0670-05	CHIP R							
S101			S62-0034-05	SLIDE SWITCH (DE-EMPHASIS)							
D8			HZS5.1(NV2)	ZENER DIODE							
D8			RD5.1(EV2)	ZENER DIODE							
D4			HZS3.3(NV2)	ZENER DIODE							
D4			RD3.3(EV2)	ZENER DIODE							
D7			MA111	ZENER DIODE							
D8			HSS104	DIODE							
D8			1SS133	ZENER DIODE							
D8			HZS8.2(NV2)	ZENER DIODE							
D1			RD8.2(EV2)	ZENER DIODE							
D11			MA111	ZENER DIODE							
IC1			LA1831AKEN	ANALOGUE IC							
IC2			LC7218	(CPLL FREQUENCY SYNTHESIZER)							
			NJM4565D	IC(OP AMP X2)							

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Ref. No.	Add- ress	New Parts	Parts No.	Description	Ref. No.	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
R1			RK73FB2A681J	CHIP R	680	J	1/10W			L : Scandinavia	R : Mexico
R2			RK73FB2A332J	CHIP R	3.3K	J	1/10W			Y : PX (Far East, Hawaii)	G : Germany
R3			RK73FB2A331J	CHIP R	330	J	1/10W			Y : AA/EE (Europe)	C : China
R4			RK73FB2A470J	CHIP R	47	J	1/10W			X : Australia	M : Other Areas
R6			RK73FB2A331J	CHIP R	330	J	1/10W			△ indicates safety critical components.	△ indicates safety critical components.
R11	▲		RK73FB2A820J	FL-PROOF RS	890	J	1W				
R15			RK73FB2A391J	CHIP R	3.3K	J	1/10W				
R19			RK73FB2A332J	CHIP R	39K	J	1/10W				
R21			RK73FB2A393J	CHIP R	1.0K	J	1/10W				
R24			RK73FB2A102J	CHIP R	10K	J	1/10W				
R25			RK73FB2B3D221J	FL-PROOF RS	220	J	1.0K				
R31			RK73FB2A102J	CHIP R	220	J	2W				
R32	-37		RK73FB2A102J	CHIP R	8.2K	J	1/10W				
R38			RK73FB2A822J	CHIP R	8.2K	J	1/10W				
R39			RK73FB2A102J	CHIP R	1.0K	J	1/10W				
R40			RK14BFB2E101J	RD	100	J	1/4W				
R42			RK73FB2A103J	CHIP R	10K	J	1/10W				
R43			RK73FB2A72J	CHIP R	4.7K	J	1/10W				
R62			RK73FB2A104J	CHIP R	100K	J	1/10W				
R64			RK73FB2A333J	CHIP R	33K	J	1/10W				
R101,102			RK73FB2A123J	CHIP R	12K	J	1/10W				
R105,106			RK73FB2A470J	RD	47	J	1/4W				
R111			RK73FB2A122J	CHIP R	1.2K	J	1/10W				
R118			RK73FB2A123J	CHIP R	12K	J	1/10W				
R119			RK73FB2A123J	CHIP R	12K	J	1/10W				
R122			RK73FB2A122J	CHIP R	1.2K	J	1/10W				
R123			RK73FB2A123J	CHIP R	12K	J	1/10W				
R124			RK73FB2A103J	CHIP R	10K	J	1/10W				
R125,126			RK73FB2A332J	CHIP R	3.3K	J	1/10W				
R127,128			RD14NB2E101J	RD	100	J	1/4W				
R131,132			RK73FB2A393J	CHIP R	39K	J	1/10W				
R138,139			RK73FB2A561J	CHIP R	560	J	1/10W				
R140,141			RK73FB2A473J	CHIP R	47K	J	1/10W				
R151			RK73FB2A821J	CHIP R	820	J	1/10W				
R152			RK73FB2A473J	CHIP R	47K	J	1/10W				
R153			RK73FB2A472J	CHIP R	4.7K	J	1/10W				
R167			RK73FB2A102J	CHIP R	1.0K	J	1/10W				
W46			R92-0670-04J	CHIP R	100K	J	0 OHM				
W48			R92-0670-05	CHIP R	100K	J	0 OHM				
S101			S62-0034-05	SLIDE SWITCH (DE-EMPHASIS)							
D8			HZS5.1(NV2)	ZENER DIODE							
D8			RD5.1(EV2)	ZENER DIODE							
D4			HZS3.3(NV2)	ZENER DIODE							
D4			RD3.3(EV2)	ZENER DIODE							
D7			MA111	ZENER DIODE							
D8			HSS104	DIODE							
D8			1SS133	ZENER DIODE							
D8			HZS8.2(NV2)	ZENER DIODE							
D1			RD8.2(EV2)	ZENER DIODE							
D11			MA111	ZENER DIODE							
IC1			LA1831AKEN	ANALOGUE IC							
IC2			LC7218	(CPLL FREQUENCY SYNTHESIZER)							
			NJM4565D	IC(OP AMP X2)							

L : Scandinavia
Y : PX (Far East, Hawaii)
X : AA/EE (Europe)
P : Canada
E : Europe
G : Germany
R : Mexico
K : USA
T : Europe
F : Asia
H : Other Areas
M : Australia
A : AA/EE (Europe)
△ indicates safety critical components.

K : USA
P : Canada
R : Mexico
G : Germany
C : China
B : Mexico
G : Germany
C : China
D : KR-V990D
9 : KR-V9080
△ indicates safety critical components.

KR-V990D/V9080

PARTS LIST

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* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans la Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No	Add'l Refs	Parts No.	Description	Desti- nation	Parts No.	Description	Desti- nation	Re- marks		
Ref. No	Add'l Refs	Parts No.	Description	Desti- nation	Ref. No	Add'l Refs	Parts No.	Description		
C74		CK45FEH2H103P	CERAMIC	P	C232	CE04KWOJ221M	ELECTRO	220UF	6.3WV	
C75		CC45FSL1H680J	CERAMIC	J	C233	CQ93FMG1H104J	MYLAR	0.10UF	J	
C81		CK45FEH2H103P	CERAMIC	P	C234	CQ93FMG1H104J	CERAMIC	0.010UF	P	
C91	.92	CC45FSL1H180J	CERAMIC	J	C235	CQ93FMG1H101K	MYLAR	150PF	K	
C93	.94	CEO4KWC1H00M	ELECTRO	16WV	C245	CQ93FMG1H121K	MYLAR	120PF	K	
C95	.96	CC45FSL1H271J	CERAMIC	J	C246-250	*	CQ93FMG1H102J	MYLAR	1000PF	J
C97	.98	CC45FSL2H110J	CERAMIC	J	C251-252	CQ93FMG1H101K	MYLAR	1000PF	K	
C99	.00	CEO4KWA1A70M	ELECTRO	10WV	C253	CQ93FMG1H104J	MYLAR	0.10UF	J	
C103	.04	CC45FSL1H221J	CERAMIC	J	CN21	*	CQ93FMG1H104J	PIN ASSY	(2P)	D
C105	.06	CC45FSL1H680J	CERAMIC	J	CN22	*	CQ93FMG1H102J	FLAT CABLE CONNECTOR (4P)	(2P)	
C107	.110	CEO4KWA101M	ELECTRO	10WV	CN23	*	CQ93FMG1H101K	PIN ASSY	(9P)	
C111		CC45FSL1H220J	CERAMIC	J	CN24	*	CQ93FMG1H104J	FLAT CABLE CONNECTOR (3P)		
C112		CEO4KWA100M	ELECTRO	10WV	CN26	*	CQ93FMG1H104J	FLAT CABLE CONNECTOR (8P)		D
C113		CEO4KWA100M	ELECTRO	J	CN27	*	CQ93FMG1H104J	FLAT CABLE CONNECTOR (8P)		
C114		CC45FSL2H220J	CERAMIC	J	CN27	*	CQ93FMG1H104J	FLAT CABLE CONNECTOR (10P)		
C115		CC45FSL2H680J	CERAMIC	J	CN28	*	CQ93FMG1H104J	PIN ASSY	(2P)	
C116		CEO4KWA470M	ELECTRO	100WV	CN29	*	CQ93FMG1H104J	PIN ASSY	(3P)	D
C117		CEO4KWA101M	ELECTRO	100WV	CN30	*	CQ93FMG1H104J	SOCKET FOR PIN ASSY	(14P)	
C118		CC45FSL1H680J	CERAMIC	J	CN31	*	CQ93FMG1H104J	SOCKET FOR PIN ASSY	(14P)	
C119		CEO4KWA470M	ELECTRO	100WV	CN32	*	CQ93FMG1H104J	SOCKET FOR PIN ASSY	(14P)	
C120		CQ93FMG1H152J	MYLAR	J	CN33	*	CQ93FMG1H104J	PIN ASSY	(14P)	
C121		CQ93FMG1H103J	MYLAR	J	CN34	*	CQ93FMG1H104J	PIN ASSY	(2P)	
C122		CQ93FMG1H682J	MYLAR	J	CN35	*	CQ93FMG1H104J	PIN ASSY	(2P)	
C123		CQ93FMG1H152J	MYLAR	J	CN37	*	CQ93FMG1H104J	AC OUTLET	(SWITCHED)	
C124		CQ93FMG1H472J	MYLAR	J	CN38	*	CQ93FMG1H104J	AC OUTLET	(SWITCHED)	
C125		CQ93FMG1H271K	MYLAR	J	CN39	*	CQ93FMG1H104J	AC OUTLET	(SWITCHED)	
C126	.130	CQ93FMG1H472J	MYLAR	J	CN40	*	CQ93FMG1H104J	SCREW TERMINAL BOARD(FRONT,A)	KP	
C131	.134	CQ93FMG1H682J	MYLAR	J	CN41	*	CQ93FMG1H104J	SCREW TERMINAL BOARD(FRONT,B)	XEMC	
C132		CQ93FMG1H152J	MYLAR	J	CN42	*	CQ93FMG1H104J	SCREW TERMINAL BOARD(CENTRE,FRONT)	KP	
C133	.136	CQ93FMG1H472J	MYLAR	J	CN43	*	CQ93FMG1H104J	SCREW TERMINAL BOARD(CENTRE,FRONT)	XEMC	
C134		CQ93FMG1H271K	MYLAR	J	CN44	*	CQ93FMG1H104J	SCREW TERMINAL BOARD(CENTRE,FRONT)	XEMC	
C135	.136	CQ93FMG1H103J	MYLAR	J	CN45	*	CQ93FMG1H104J	INSULATING BOARD	KP	
C136		CQ93FMG1H103Z	MYLAR	J	F1	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C137	.142	CQ93FMG1H103Z	MYLAR	J	F1	*	CQ93FMG1H104J	FUSE (SEMKO)	(125V 10A)	
C138	.142	CQ93FMG1H103Z	MYLAR	J	F2	*	CQ93FMG1H104J	FUSE (SEMKO)	(125V 10A)	
C139	.142	CQ93FMG1H103Z	MYLAR	J	F3	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T4A L)	
C140		CQ93FMG1H103Z	MYLAR	J	F4	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T2.5A L)	
C141		CQ93FMG1H103Z	MYLAR	J	F5	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C142		CQ93FMG1H103Z	MYLAR	J	F6	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C143		CQ93FMG1H104J	MYLAR	J	F7	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C144		CQ93FMG1H104J	MYLAR	J	F8	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C145		CQ93FMG1H104J	MYLAR	J	F9	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C146		CQ93FMG1H104J	MYLAR	J	F10	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C147		CQ93FMG1H104J	MYLAR	J	F11	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C148		CQ93FMG1H104J	MYLAR	J	F12	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C149	.194	CQ93FMG1H104J	MYLAR	J	F13	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C150	.196	CQ93FMG1H104J	MYLAR	J	F14	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C151	.198	CQ93FMG1H104J	MYLAR	J	F15	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C152		CQ93FMG1H104J	MYLAR	J	F16	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C153		CQ93FMG1H104J	MYLAR	J	F17	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C154		CQ93FMG1H104J	MYLAR	J	F18	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C155		CQ93FMG1H104J	MYLAR	J	F19	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C156		CQ93FMG1H104J	MYLAR	J	F20	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C157		CQ93FMG1H104J	MYLAR	J	F21	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C158		CQ93FMG1H104J	MYLAR	J	F22	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C159		CQ93FMG1H104J	MYLAR	J	F23	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C160		CQ93FMG1H104J	MYLAR	J	F24	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C161		CQ93FMG1H104J	MYLAR	J	F25	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C162		CQ93FMG1H104J	MYLAR	J	F26	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C163		CQ93FMG1H104J	MYLAR	J	F27	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C164		CQ93FMG1H104J	MYLAR	J	F28	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C165		CQ93FMG1H104J	MYLAR	J	F29	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C166		CQ93FMG1H104J	MYLAR	J	F30	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C167		CQ93FMG1H104J	MYLAR	J	F31	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C168	.169	CQ93FMG1H104J	MYLAR	J	F32	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C169	.169	CQ93FMG1H104J	MYLAR	J	F33	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C170		CQ93FMG1H104J	MYLAR	J	F34	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C171		CQ93FMG1H104J	MYLAR	J	F35	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C172		CQ93FMG1H104J	MYLAR	J	F36	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C173		CQ93FMG1H104J	MYLAR	J	F37	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C174		CQ93FMG1H104J	MYLAR	J	F38	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C175		CQ93FMG1H104J	MYLAR	J	F39	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C176		CQ93FMG1H104J	MYLAR	J	F40	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C177		CQ93FMG1H104J	MYLAR	J	F41	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C178		CQ93FMG1H104J	MYLAR	J	F42	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C179		CQ93FMG1H104J	MYLAR	J	F43	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C180		CQ93FMG1H104J	MYLAR	J	F44	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C181		CQ93FMG1H104J	MYLAR	J	F45	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C182		CQ93FMG1H104J	MYLAR	J	F46	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C183		CQ93FMG1H104J	MYLAR	J	F47	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C184		CQ93FMG1H104J	MYLAR	J	F48	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C185		CQ93FMG1H104J	MYLAR	J	F49	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C186		CQ93FMG1H104J	MYLAR	J	F50	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C187		CQ93FMG1H104J	MYLAR	J	F51	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C188		CQ93FMG1H104J	MYLAR	J	F52	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C189		CQ93FMG1H104J	MYLAR	J	F53	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C190		CQ93FMG1H104J	MYLAR	J	F54	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C191		CQ93FMG1H104J	MYLAR	J	F55	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C192		CQ93FMG1H104J	MYLAR	J	F56	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C193		CQ93FMG1H104J	MYLAR	J	F57	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C194		CQ93FMG1H104J	MYLAR	J	F58	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C195		CQ93FMG1H104J	MYLAR	J	F59	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C196		CQ93FMG1H104J	MYLAR	J	F60	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C197		CQ93FMG1H104J	MYLAR	J	F61	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C198		CQ93FMG1H104J	MYLAR	J	F62	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C199		CQ93FMG1H104J	MYLAR	J	F63	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C200		CQ93FMG1H104J	MYLAR	J	F64	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C201		CQ93FMG1H104J	MYLAR	J	F65	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C202		CQ93FMG1H104J	MYLAR	J	F66	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C203		CQ93FMG1H104J	MYLAR	J	F67	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C204		CQ93FMG1H104J	MYLAR	J	F68	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C205		CQ93FMG1H104J	MYLAR	J	F69	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C206		CQ93FMG1H104J	MYLAR	J	F70	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C207		CQ93FMG1H104J	MYLAR	J	F71	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C208		CQ93FMG1H104J	MYLAR	J	F72	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C209		CQ93FMG1H104J	MYLAR	J	F73	*	CQ93FMG1H104J	FUSE (SEMKO)	(250V T5A L)	
C210		CQ93FMG1H104J	MYLAR	J	F74	*	CQ93FMG1H104J			

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PARTS LIST

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* New Parts
Parts without **Parts No.** are not supplied.
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
S3			S31-2322-05	SLIDE SWITCH (AC VOLTAGE SEL.)	YM	
D1			HSS104	DIODE		
D1			ISS133	DIODE		
D2..3			HSS104A	DIODE		
D2..3			ISS131	DIODE		
D4..7			S5688B	DIODE		
D4..7			1SR139..100	ZENER DIODE		
D8			HZS2..N(B2)	ZENER DIODE		
D8			RD2..7ES(B2)	ZENER DIODE		
D9			HZS6..2N(B2)	ZENER DIODE		
D9			RD6..2ES(B2)	ZENER DIODE		
D10			HZS8..2N(B2)	ZENER DIODE		
D10			RD8..2ES(B2)	ZENER DIODE		
D11..14			S5688B	ZENER DIODE		
D11..14			RD8..2ES(B2)	ZENER DIODE		
D15			1SR139..100	DIODE		
D15			D5SSB20F03	DIODE		
D16			D5FB20-4002-L1	DIODE		
D17			HZS16N(B2)	ZENER DIODE		
D17			RD16ES(B2)	ZENER DIODE		
D18			HZS18N(B2)	ZENER DIODE		
D18			RD18ES(B2)	ZENER DIODE		
D19..20			S5688B	DIODE		
D19..20			1SR139..100	DIODE		
D21..22			HSS104A	DIODE		
D21..22			ISS131	DIODE		
D23			HZS5..1N(B2)	ZENER DIODE		
D23			RD5..1ES(B2)	ZENER DIODE		
D24..27			HSS104	DIODE		
D24..27			ISS133	DIODE		
D31..32			HSS104A	DIODE		
D31..32			ISS131	DIODE		
D31..32			HSS104	DIODE		
D41..42			ISS133	DIODE		
D41..42			D5SSB20F03	DIODE		
D43			HSS104A	DIODE		
D61			ISS131	DIODE		
D61			HSS104A	DIODE		
D91..92			ISS131	DIODE		
D91..92			HSS104A	DIODE		
D131..132			ISS131	DIODE		
D131..132			HSS104A	DIODE		
D161			ISS131	DIODE		
D161			HSS104A	DIODE		
D191..192			ISS131	DIODE		
D191..192			HSS104A	DIODE		
D211			ISS131	DIODE		
D211			HSS104	DIODE		
D211			ISS133	DIODE		
D222			HZS16N(B2)	ZENER DIODE		
D222			RD16ES(B2)	ZENER DIODE		
D223			HZS8..2N(B2)	ZENER DIODE		
D223			RD8..2ES(B2)	ZENER DIODE		
D231			HSS104A	DIODE		
D231			ISS131	DIODE		
D232			HZS4..7N(B2)	ZENER DIODE		
D232			RD4..7ES(B2)	ZENER DIODE		

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* New Parts
* Nouveaux articles sans mention de la partie **No.** ne sont pas fournis.
* Neues Teile ohne die Angabe der Nummer **No.** werden nicht geliefert.

Ref. No	Add- res-	New Parts	Parts No.	Description	Desig- na-tion	Re- marks
T1	T1	*	L07-0866-05 L07-0867-05 L07-2114-05	POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER	X E C	
CP1 .3	CP4 .5		R90-0888-05 R90-0186-05 R92-1769-45 RD14NB2E4R7J RD14NB2E221J	MULTI-COMP MULTI-COMP CARBON RD RD	J K J J J	5W 5W 3.3M 4.7 220
R1	R13		RD14NB2E15J RD14NB2E70J RD14NB2E22J RD14NB2E10J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R6	R14 .16		RD14NB2E4R7J	RD	J	1/4W
R8	R47 .50		RD14NB2E15J RD14NB2E22J RD14NB2E10J	RD RD RD	J J J	1/4W 1/4W 1/4W
R57 .58	R77		RD14NB2E221J RD14NB2E221J RD14NB2E10J RD14NB2E10J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R79	R107 .110		RD14NB2E222J RD14NB2E222J RD14NB2E10J RD14NB2E10J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R113 .114	R113 .114		RD14NB2E30J RD14NB2E30J RD14NB2E330J RD14NB2E330J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R117	R117		RD14NB2E10J RD14NB2E10J RD14NB2E10J RD14NB2E10J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R119 .120	R135 .138		RD14NB2E20J RD14NB2E20J RD14NB2E20J RD14NB2E20J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R139 .140	R145 .146		RD14NB2E33J RS14KB3D4R7J RD14NB2E10J RD14NB2E10J	RD FL-PROOF RS RD RD	J J J J	3.3K 4.7 10 10
R149 .150	R155 .158		RD14NB2E10J RD14NB2E10J RD14NB2E10J RD14NB2E10J	RD RD RD RD	J J J J	1/4W 1/4W 1/4W 1/4W
R165	R167		RD14NB2E220J RS14KB3D4R7J RD14NB2E10J RD14NB2E10J	RD FL-PROOF RS RD RD	J J J J	1/4W 2W 1/4W 1/4W
R175	R179		RD14NB2E33J RS14KB3D4R7J RD14NB2E10J RD14NB2E10J	RD FL-PROOF RS RD RD	J J J J	3.3K 4.7 10 10
R187	R197 .200		RD14NB2E220J RD14NB2E33J RD14NB2E10J RD14NB2E10J	RD FL-PROOF RS RD FL-PROOF RS	J J J J	22 1/4W 1/4W 1/4W
R201 .202	R207 .208		RD14NB2E33J RS14KB3D4R7J RD14NB2E10J RD14NB2E10J	RD FL-PROOF RS RD FL-PROOF RS	J J J J	3.3K 4.7 10 10
R223	R223		RD14NB2E61J RS14KB3D10J RD14NB2E61J RD14NB2E61J	RD FL-PROOF RS RD FL-PROOF RS	J J J J	5.60 1.0K 1.0K 1.0K
R226	R245		RD14NB2E10J RS14KB3D10J RD14NB2E16J RD14NB2E16J	RD FL-PROOF RS RD FL-PROOF RS RD FL-PROOF RS	J J J J	2W 2W 1W 1W
RVR1 .2	RVR3		R12-1616-05 R12-1616-05	RD RD	J J	1/4W 1/4W
RVR4 .5	K2 .3		R12-1617-05 R12-1616-05	RD RD	J J	1/4W 1/4W
690	1A1B		S79-0013-05	THERMAL SWITCH	E	MAGNETIC RELAY
690	1C	*	S79-0025-05	THERMAL SWITCH	KP	MAGNETIC RELAY
690	1C	*	S76-0002-05	MAGNETIC RELAY	YMC	MAGNETIC RELAY
K1			S51-2088-05	SLIDE SWITCH (POWER TYPE)		SLIDE SWITCH (AC VOLTAGE SEL.)
S2			S62-0001-05			

NA indicates safety critical components.

A indicates safety critical components.

C : CHIN **M : Other Areas** **X : Australia** **Y : AAFES(Europe)**

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PARTS LIST

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Ref. No.	Add.- ress	Parts No.	Description	Desti- nation	Re- marks
D233-239		HSS104	DIODE		
D233-239		1SS133	DIODE		
		H2S13N(B2)	ZENER DIODE		
D240		RD3.9E(S)(B2)	ZENER DIODE		
D241		H2S13N(B2)	ZENER DIODE		
D241		RD3ES(B2)	ZENER DIODE		
D242		H2S13N(B2)	ZENER DIODE		
D242		RD3.9E(S)(B2)	ZENER DIODE		
Q1		2SC22003IL(K)	TRANSISTOR		
Q2		2SC33940A(R,S)	TRANSISTOR		
A	Q3	2SA1534A(R,S)	TRANSISTOR		
	Q4	2SA992(F,E)	TRANSISTOR		
	Q31 .32	2SC22878(B)	TRANSISTOR		
	Q33 .36	2SA992(F,E)	TRANSISTOR		
	Q37 .38	2SC22631(R,S)	TRANSISTOR		
	Q39 .40	2SA1123(R,S)	TRANSISTOR		
	Q41 .43	2SC22631(R,S)	TRANSISTOR		
	Q44 .45	2SA1123(R,S)	TRANSISTOR		
	Q46 .47	2SC22878(B)	TRANSISTOR		
	Q61	2SA992(F,E)	TRANSISTOR		
	Q63	2SA992(F,E)	TRANSISTOR		
	Q65	2SC22631(R,S)	TRANSISTOR		
	Q67	2SA1123(R,S)	TRANSISTOR		
	Q69	2SC22631(R,S)	TRANSISTOR		
	Q71	2SC22878(B)	TRANSISTOR		
	Q91 .92	2SC22878(B)	TRANSISTOR		
	Q93 .96	2SA992(F,E)	TRANSISTOR		
	Q97 .100	2SC1845(F,E)	TRANSISTOR		
	Q101 .102	2SA992(F,E)	TRANSISTOR		
	Q131 .132	*	2SD2222		
A	Q133 .134	*	2SB1470		
A	Q135 .136	*	2SC1413(V,W)		
A	Q137 .138	*	2SC1845(F,E)		
A	Q161	*	2SC2222		
A	Q163	*	2SB1470		
	Q165	2SC4137(V,W)	TRANSISTOR		
A	Q167	2SC1845(F,E)	TRANSISTOR		
A	Q169 .192	2SC2289	TRANSISTOR		
A	Q193 .194	2SB1569	TRANSISTOR		
A	Q195 .196	2SC4137(V,W)	TRANSISTOR		
	Q197 .198	2SC1845(F,E)	TRANSISTOR		
	Q211 .212	2SC3311A(O,R)	TRANSISTOR		
	Q221	2SA992(F,E)	TRANSISTOR		
	Q222	2SA1048(Y,GR)	TRANSISTOR		
A	Q222	2SA1309A(Q,R)	TRANSISTOR		
A	Q223	2SB1370	TRANSISTOR		
A	Q223	2SA992(F,E)	TRANSISTOR		
A	Q231	2SC1845(F,E)	TRANSISTOR		
A	Q232 .233	DTC113ZS	DIGITAL TRANSISTOR		
	Q234 .236	UN4219	DIGITAL TRANSISTOR		
	C1.2	CC73FSL1H101J	CHIP C	100PF	J

SURROUND UNIT (X08-2710-10) KR-V990D only

Ref. No.	Add.- ress	Parts No.	Description	Desti- nation	Re- marks
C5.6		CC73FSL1H101J	CHIP C	100PF	J
C9.10		CC73FSL1H101J	CHIP C	100PF	J
C13 .14		CC73FSL1H101J	CHIP C	100PF	J
C17 .18		CC73FSL1H101J	CHIP C	100PF	J
C21 .22		CC73FSL1H101J	CHIP C	39PF	J
C23 .24		CE04KW1C100M	ELECTRO	10UF	16WV
C25 .26		CE04KW1A101M	ELECTRO	220PF	J
C27 .28		CK73FB1H102K	ELECTRO	1000PF	K
C29 .30		CQ93FMG1H123J	MYLAR	0.012UF	J
C31 .32		CQ93FMG1H123J	MYLAR	3300PF	J
C33 .34		CE04KW1V4R7M	ELECTRO	35WF	K
C35 .36		CK73FB1H102K	ELECTRO	1000PF	K
C37		CE04KW1C100M	ELECTRO	2.2UF	50WF
C41 .42		CK73FSL1H101J	ELECTRO	100PF	J
C43 .44		CK73FSL1H101J	ELECTRO	2.2UF	50WF
C45 .46		CK73FSL1H102J	CHIP C	220PF	J
C47 .48		CK73FB1H102K	CHIP C	100PF	K
C49		CE04KW1C100M	ELECTRO	10UF	16WV
C50		CE04FF1E104Z	ELECTRO	0.10UF	10WF
C51 .52		CE04KW1H2R2M	ELECTRO	100UF	10WF
C53 .54		CK73FSL1H102J	CHIP C	0.10UF	Z
C55		CK73FB1H102K	CHIP C	100PF	Z
C57		CE04KW1A101M	ELECTRO	100UF	16WV
C58		CK73FF1E104Z	ELECTRO	0.10UF	10WF
C59		CE04KW1C100M	ELECTRO	100UF	10WF
C60		CE04KW1A101M	ELECTRO	100UF	10WF
C61 .62		CK73FF1E104Z	CHIP C	0.10UF	Z
C63		CE04KW1C100M	ELECTRO	100UF	16WV
C64		CK73F1E104Z	ELECTRO	100UF	10WF
C65 .66		CK73FF1E104Z	ELECTRO	0.10UF	10WF
C67		CK73FB1H1471K	CHIP C	470PF	K
C68 .71		CC73FCH1H470J	CHIP C	47PF	J
C74 .78		CK73FF1E104Z	ELECTRO	0.10UF	10WF
C81		CE04KW1A101M	ELECTRO	100UF	10WF
C82 .85		CK73F1E104Z	ELECTRO	0.10UF	10WF
C86 .87		CC73FCH1H470J	CHIP C	47PF	J
C88		CC73FCH1H470J	CHIP C	22PF	J
C89		CE04KW1A101M	ELECTRO	47UF	10WF
C91 .92		CE04KW1C100M	ELECTRO	10UF	16WV
C93 .94		CK73FF1E104Z	ELECTRO	0.10UF	10WF
C94 .96		CE04KW1H101M	ELECTRO	0.10UF	10WF
C97		CE04KW1A101M	ELECTRO	100UF	10WF
C101 .102		CE04KW1A470M	ELECTRO	47UF	10WF
C103		CE04KW1C100M	ELECTRO	10UF	16WV
C104 .106		CK73FF1E104Z	ELECTRO	0.10UF	10WF
C107 .108		CE04KW1H101M	ELECTRO	0.10UF	10WF
C109 .110		CE04KW1V4R7M	ELECTRO	4.7UF	35WF
C111 .112		CE04KW1A470M	ELECTRO	47UF	10WF
C114 .116		CK73FSL1H101J	CHIP C	0.10UF	Z
C117 .118		CC73FSL1H221J	CHIP C	220PF	J
C119 .120		CC73FCH1H4220J	CHIP C	100PF	J
C121 .122		CC73FSL1H221J	CHIP C	220PF	J
C123 .124		CC73FSL1H331J	CHIP C	330PF	J
C125 .126		CC73FSL1H822J	CHIP C	8200PF	J
C131 .132		CQ93FMG1H822J	MYLAR		

L : Scandinavia K : USA P : Canada R : Mexico
 L : PXIfar East, Hawaii K : Europe E : Europe G : Germany
 Y : AA-EESEurope X : Australia M : Other Areas C : China

△ indicates safety critical components.

R : Mexico G : Germany
 D : KR-V990D S : KR-V9080
 E : Europe C : China

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KR-V990D/V9080

PARTS LIST

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Ref. No	Add. Refs	Parts No.	Description	Ref. No	Add. Refs	Parts No.	Description
C133,134		CQ93FMG1H392J	MYLAR	C354		CE04KW1A101M	ELECTRO
C135,136		CQ93FMG1H472J	MYLAR	C355-358		CK75FF1E104Z	CHIP C
C141,142		CC73FSU1H101J	CHIP C	C359		CE04KW1A101M	ELECTRO
C143,144		CC73FSU1H221J	CHIP C	C361		CK73FB1H102K	CHIP C
C145,146		CC73FSU1H331J	CHIP C	C371,372		CK73FB1H102K	CHIP C
C151,152		CQ93FMG1H822J	MYLAR	C373,374		CC73FC1H100D	CHIP C
C153,154		CQ93FMG1H392J	MYLAR	C375		CC73FC1H220J	CHIP C
C155,156		CQ93FMG1H472J	MYLAR	C376,377		CC73FC1H470J	CHIP C
C161,162		CC73FSU1H101J	CHIP C	C378		CC73FC1H271J	CHIP C
C163,164		CC73FSU1H221J	CHIP C	C379		CE04KW1A101M	ELECTRO
C165,166		CC73FSU1H331J	CHIP C	C380,381		CK75FF1E104Z	CHIP C
C171,172		CQ93FMG1H822J	MYLAR	C382		CK75FB1H102K	CHIP C
C173,174		CQ93FMG1H392J	MYLAR	C383,384		CC73FC1H100D	CHIP C
C175,176		CQ93FMG1H472J	MYLAR	C389		CK73FF1E104Z	CHIP C
C181,184		CQ93FMG1H104J	MYLAR	C391-422		CK73FF1E104Z	CHIP C
C185,186		CC73FSU1H101J	CHIP C	C429-433		CK75FF1E104Z	CHIP C
C187,188		CE04KW1H282M	ELECTRO	C434		CK75FB1H103K	CHIP C
C193		CQ93FMG1H104J	MYLAR	C435-438		CC73FC1H104Z	CHIP C
C195		CQ93FMG1H472J	MYLAR	C439		CE04KW1A101M	ELECTRO
C197,198		CC73FSU1H101J	CHIP C	C440		CK73FF1E104Z	CHIP C
C201,202		CE04KW1H282M	ELECTRO	C443		CC73FSU1H101J	CHIP C
C207,212		CQ93FMG1H333J	MYLAR	C501,502		CC73FSU1H2P2M	ELECTRO
C213,215		CQ93FMG1H104J	MYLAR	C505-508		CC73FSU1H101J	CHIP C
C217,218		CE04KW1H282M	ELECTRO	C511		CE04KW1V4RTM	ELECTRO
C221,224		CQ93FMG1H104J	MYLAR	C515		CC73FSU1H2RM	ELECTRO
C227,228		CE04KW1C220W	ELECTRO	C517		CE04KW1H2R2M	ELECTRO
C231,234		CE04KW1H282M	ELECTRO	C521-524		CK75FF1E104Z	CHIP C
C237,238		CC73FSU1H101J	CHIP C	C531,532		CE04KW1V220M	ELECTRO
C244		CE04KW1V4R7M	ELECTRO	C533,534		CE04KW1V470M	ELECTRO
C247,248		CC73FSU1H101J	CHIP C	C535,536		CE04KW1V4RTM	ELECTRO
C251,252		CK73FF1E104Z	CHIP C	C541-538		CC73FSU1H101J	CHIP C
C253,254		CK73FB1H103K	CHIP C	C545,546		CC73FSU1H101J	MYLAR
C255,256		CK73FF1E104Z	CHIP C	C547,548		CE04KW1H2P2M	CHIP C
C265,266		CE04KW1C470M	ELECTRO	C550		CK73FB1H102K	CHIP C
C269,270		CK73FF1E104Z	CHIP C	C551,552		CK73FSU1H101J	CHIP C
C279,280		CK73FF1E104Z	CHIP C	C553-558		CE04KW1V4RTM	ELECTRO
C301		CK73FB1H103K	CHIP C	C561,602		CC73FC1H220J	CHIP C
C310-314		CK73FF1E104Z	CHIP C	C603,604		CE04KW1V4RTM	ELECTRO
C321		CK73FC1H1470J	CHIP C	C605,606		CK73FF1E104Z	CHIP C
C322		CK73FSU1H102K	CHIP C	C607-610		CE04KW1C470M	ELECTRO
C323		CE04KW1C470M	ELECTRO	C611-613		CK73FB1H104Z	CHIP C
C331		CK73FF1E104Z	CHIP C	CN1-3	*	SOCKET FOR PIN ASSY (16P)	
C332,333		CK73FB1H103K	CHIP C	J1-2	*	SOCKET FOR PIN ASSY (20P)	
C341		CK73FF1E104Z	CHIP C	J3-4	*	PHONE JACK (6P/TAPE 1/2CD/PHONE)	
C342		CK73FC1H1470J	CHIP C	J11	*	PHONE JACK (3P/PRE OUT)	
C343,344		CE04KW1C101M	ELECTRO	L1-5		PHONE JACK (2P/AC3 AUDIO INPUT)	
C345		CK73FF1E104Z	CHIP C	L7-17		FERRITE CORE	
C346		CE04KW1C100M	ELECTRO	L7-17		FERRITE CORE	
C347,348		CK73FF1E104Z	CHIP C	L19-21		FERRITE CORE	
C350		CE04KW1A101M	ELECTRO	L23		FERRITE CORE	
C351,352		CK73FF1E104Z	CHIP C	L25-27		FERRITE CORE	
C353		CE04KW1C100M	ELECTRO	L20		LC FILTER	
				X11		RESONATOR (4.19MHz)	

K : USA P : Canada R : Mexico Y : PX(Far East, Hawaii) T : Europe E : Europe F : Scandinavia V : AAFFES(Europe)

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D : KR-V990D G : Germany C : CHINA

9 : KR-V9080

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C133,134		CQ93FMG1H392J	MYLAR	C354		CE04KW1A101M	ELECTRO
C135,136		CQ93FMG1H472J	MYLAR	C355-358		CK75FF1E104Z	CHIP C
C141,142		CC73FSU1H101J	CHIP C	C359		CE04KW1A101M	ELECTRO
C143,144		CC73FSU1H221J	CHIP C	C361		CK73FB1H102K	CHIP C
C145,146		CC73FSU1H331J	CHIP C	C371,372		CK73FB1H102K	CHIP C
C151,152		CQ93FMG1H822J	MYLAR	C373,374		CC73FC1H100D	CHIP C
C153,154		CQ93FMG1H392J	MYLAR	C375		CC73FC1H220J	CHIP C
C155,156		CQ93FMG1H472J	MYLAR	C376,377		CC73FC1H470J	CHIP C
C161,162		CC73FSU1H101J	CHIP C	C378		CC73FC1H271J	CHIP C
C163,164		CC73FSU1H221J	CHIP C	C379		CE04KW1A101M	ELECTRO
C165,166		CC73FSU1H331J	CHIP C	C380,381		CK75FF1E104Z	CHIP C
C171,172		CQ93FMG1H822J	MYLAR	C382		CK75FB1H102K	CHIP C
C173,174		CQ93FMG1H392J	MYLAR	C383,384		CC73FC1H100D	CHIP C
C175,176		CQ93FMG1H472J	MYLAR	C389		CK73FF1E104Z	CHIP C
C181,184		CQ93FMG1H104J	MYLAR	C391-422		CK73FF1E104Z	CHIP C
C185,186		CC73FSU1H101J	CHIP C	C429-433		CK75FF1E104Z	CHIP C
C187,188		CE04KW1H282M	ELECTRO	C434		CK75FB1H103K	CHIP C
C193		CQ93FMG1H104J	MYLAR	C435-438		CC73FC1H104Z	CHIP C
C195		CQ93FMG1H472J	MYLAR	C439		CE04KW1A101M	ELECTRO
C197,198		CC73FSU1H101J	CHIP C	C440		CK73FF1E104Z	CHIP C
C201,202		CE04KW1H282M	ELECTRO	C443		CC73FSU1H101J	CHIP C
C207,212		CQ93FMG1H333J	MYLAR	C501,502		CE04KW1H2P2M	ELECTRO
C213,215		CQ93FMG1H104J	MYLAR	C505-508		CC73FSU1H101J	CHIP C
C217,218		CE04KW1H282M	ELECTRO	C511		CE04KW1V4RTM	ELECTRO
C221,224		CQ93FMG1H104J	MYLAR	C515		CE04KW1V4RTM	ELECTRO
C227,228		CE04KW1C220W	ELECTRO	C517		CE04KW1H2R2M	ELECTRO
C231,234		CE04KW1H282M	ELECTRO	C521-524		CK75FF1E104Z	CHIP C
C237,238		CC73FSU1H101J	CHIP C	C531,532		CE04KW1V220M	ELECTRO
C244		CE04KW1V4R7M	ELECTRO	C533,534		CE04KW1V470M	ELECTRO
C247,248		CC73FSU1H101J	CHIP C	C535,536		CE04KW1V4RTM	ELECTRO
C251,252		CK73FF1E104Z	CHIP C	C541-544		CC73FSU1H101J	CHIP C
C253,254		CK73FB1H103K	CHIP C	C545,546		CE04KW1H2P2M	CHIP C
C255,256		CK73FF1E104Z	CHIP C	C547,548		CK73FF1E104Z	CHIP C
C265,266		CE04KW1C470M	ELECTRO	C550		CK73FB1H102K	CHIP C
C269,270		CK73FF1E104Z	CHIP C	C551,552		CK73FSU1H101J	CHIP C
C279,280		CK73FF1E104Z	CHIP C	C553-558		CE04KW1V4RTM	ELECTRO
C301		CK73FB1H103K	CHIP C	C561,602		CC73FC1H220J	CHIP C
C310-314		CK73FF1E104Z	CHIP C	C603,604		CE04KW1V4RTM	ELECTRO
C321		CK73FC1H1470J	CHIP C	C605,606		CK73FF1E104Z	CHIP C
C322		CK73FSU1H102K	CHIP C	C607-610		CE04KW1C470M	ELECTRO
C323		CE04KW1C470M	ELECTRO	C611-613		CK73FB1H104Z	CHIP C
C331		CK73FF1E104Z	CHIP C	CN1-3	*	SOCKET FOR PIN ASSY (16P)	
C332,333		CK73FB1H103K	CHIP C	J1-2	*	SOCKET FOR PIN ASSY (20P)	
C341		CK73FF1E104Z	CHIP C	J3-4	*	PHONE JACK (6P/TAPE 1/2CD/PHONE)	
C342		CK73FC1H1470J	CHIP C	J11	*	PHONE JACK (3P/PRE OUT)	
C343,344		CE04KW1C101M	ELECTRO	L1-5		PHONE JACK (2P/AC3 AUDIO INPUT)	
C345		CK73FF1E104Z	CHIP C	L7-17		FERRITE CORE	
C346		CE04KW1C100M	ELECTRO	L7-17		FERRITE CORE	
C347,348		CK73FF1E104Z	CHIP C	L19-21		FERRITE CORE	
C350		CE04KW1A101M	ELECTRO	L23		FERRITE CORE	
C351,352		CK73FF1E104Z	CHIP C	L25-27		FERRITE CORE	
C353		CE04KW1C100M	ELECTRO	L20		LC FILTER	
				X11		RESONATOR (4.19MHz)	

L : Scandinavia Y : PX(Far East, Hawaii) T : Europe E : Europe F : Scandinavia V : AAFFES(Europe)

K : USA P : Canada R : Mexico Y : PX(Far East, Hawaii) T : Europe E : Europe F : Scandinavia V : AAFFES(Europe)

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KR-V990D/V9080

PARTS LIST

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* New Parts
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Ref. No.	Add.- ress	New- Parts	Parts No.	Description	Desti- nation	Re- marks
Ref. No.	Add.- ress	New- Parts	Parts No.	Description	Desti- nation	Re- marks
X14	*	L77-1125-05	L77-2158-05	CRYSTAL RESONATOR(24.576MHz)		
X15	*	RK73FB2A222J	RK73FB2A222J	CHIP R	2.2K	J 1/10W
R1,2		RK73FB2A474J	RK73FB2A474J	CHIP R	4.7K	J 1/10W
R3,4		RK73FB2A222J	RK73FB2A222J	CHIP R	220K	J 1/10W
R5,6		RK73FB2A222J	RK73FB2A222J	CHIP R	1.0K	J 1/10W
R7,8		RK73FB2A102J	RK73FB2A102J	CHIP R	220K	J 1/10W
R9,10		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R11,12		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R13,14		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R15,16		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R17,18		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R19,20		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R21,22		RK73FB2A331J	RK73FB2A331J	CHIP R	330	J 1/10W
R23,24		RK73FB2A473J	RK73FB2A473J	CHIP R	47K	J 1/10W
R25,26		RK73FB2A102J	RK73FB2A102J	CHIP R	100	J 1/10W
R27,28		RK73FB2A336J	RK73FB2A336J	CHIP R	360	J 1/10W
R29,30		RK73FB2A274J	RK73FB2A274J	CHIP R	270K	J 1/10W
R31		RK73FB2A223J	RK73FB2A223J	CHIP R	22K	J 1/10W
R33,34		RK73FB2A473J	RK73FB2A473J	CHIP R	47K	J 1/10W
R35,36		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R40		RK73FB2A2470J	RK73FB2A2470J	CHIP R	47	J 1/10W
R41,42		RK73FB2A153J	RK73FB2A153J	CHIP R	15K	J 1/10W
R45,48		RK73FB2A393J	RK73FB2A393J	CHIP R	39K	J 1/10W
R49,50		RK73FB2A391J	RK73FB2A391J	CHIP R	390	J 1/10W
R51,52		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R53,54		RK73FB2A331J	RK73FB2A331J	CHIP R	330	J 1/10W
R57,58		RK73FB2A472J	RK73FB2A472J	CHIP R	4.7K	J 1/10W
R59		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R60,62		RK73FB2A2470J	RK73FB2A2470J	CHIP R	47	J 1/10W
R63		RK73FB2A101J	RK73FB2A101J	CHIP R	100	J 1/10W
R64,68		RK73FB2A470J	RK73FB2A470J	CHIP R	47	J 1/10W
R77,80		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R81,86		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R91,92		RK73FB2A2912J	RK73FB2A2912J	CHIP R	9.1K	J 1/10W
R93,94		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R95,96		RK73FB2A751J	RK73FB2A751J	CHIP R	750	J 1/10W
R97,98		RK73FB2A152J	RK73FB2A152J	CHIP R	1.5K	J 1/10W
R99,106		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R111,112		RK73FB2A2912J	RK73FB2A2912J	CHIP R	9.1K	J 1/10W
R113,114		RK73FB2A223J	RK73FB2A223J	CHIP R	1.0K	J 1/10W
R115,116		RK73FB2A102J	RK73FB2A102J	CHIP R	750	J 1/10W
R117,118		RK73FB2A751J	RK73FB2A751J	CHIP R	1.5K	J 1/10W
R119,126		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R131,132		RK73FB2A223J	RK73FB2A223J	CHIP R	9.1K	J 1/10W
R133,134		RK73FB2A104J	RK73FB2A104J	CHIP R	1.0K	J 1/10W
R135,136		RK73FB2A103J	RK73FB2A103J	CHIP R	24K	J 1/10W
R137,138		RK73FB2A243J	RK73FB2A243J	CHIP R	22K	J 1/10W
R139,142		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R143,144		RK73FB2A223J	RK73FB2A223J	CHIP R	22K	J 1/10W
R145,148		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R181		RK73FB2A243J	RK73FB2A243J	CHIP R	24K	J 1/10W
R182		RK73FB2A223J	RK73FB2A223J	CHIP R	33K	J 1/10W
R183		RK73FB2A335J	RK73FB2A335J	CHIP R	10K	J 1/10W
R185,189						

R : Mexico P : Canada K : USA T : Europe E : Europe F : Far East, Hawaii V : AAFFES(Europe) Y : AAFFES(Australia) L : Scandinavia Y : AAFFES(Europe) X : Australia M : Other Areas

D : KR-V990D G : Germany S : KR-V9080 C : CHINA

▲ indicates safety critical components.

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* New Parts
Parts without **Parts No.** are not supplied.
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add.- ress	New- Parts	Parts No.	Description	Desti- nation	Re- marks
X14	*	L77-1125-05	L77-2158-05	CRYSTAL RESONATOR(24.576MHz)		
X15	*	RK73FB2A222J	RK73FB2A222J	CHIP R	2.2K	J 1/10W
R1,2		RK73FB2A474J	RK73FB2A474J	CHIP R	4.7K	J 1/10W
R3,4		RK73FB2A222J	RK73FB2A222J	CHIP R	220K	J 1/10W
R5,6		RK73FB2A222J	RK73FB2A222J	CHIP R	1.0K	J 1/10W
R7,8		RK73FB2A102J	RK73FB2A102J	CHIP R	220K	J 1/10W
R9,10		RK73FB2A224J	RK73FB2A224J	CHIP R	1.0K	J 1/10W
R11,12		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R13,14		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R15,16		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R17,18		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R19,20		RK73FB2A224J	RK73FB2A224J	CHIP R	220K	J 1/10W
R21,22		RK73FB2A331J	RK73FB2A331J	CHIP R	330	J 1/10W
R23,24		RK73FB2A473J	RK73FB2A473J	CHIP R	47K	J 1/10W
R25,26		RK73FB2A102J	RK73FB2A102J	CHIP R	100	J 1/10W
R27,28		RK73FB2A336J	RK73FB2A336J	CHIP R	360	J 1/10W
R29,30		RK73FB2A274J	RK73FB2A274J	CHIP R	270K	J 1/10W
R31		RK73FB2A223J	RK73FB2A223J	CHIP R	22K	J 1/10W
R33,34		RK73FB2A473J	RK73FB2A473J	CHIP R	47K	J 1/10W
R35,36		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R40		RK73FB2A2470J	RK73FB2A2470J	CHIP R	47	J 1/10W
R41,42		RK73FB2A153J	RK73FB2A153J	CHIP R	15K	J 1/10W
R45,48		RK73FB2A393J	RK73FB2A393J	CHIP R	39K	J 1/10W
R49,50		RK73FB2A391J	RK73FB2A391J	CHIP R	390	J 1/10W
R51,52		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R53,54		RK73FB2A331J	RK73FB2A331J	CHIP R	330	J 1/10W
R57,58		RK73FB2A472J	RK73FB2A472J	CHIP R	4.7K	J 1/10W
R59		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R60,62		RK73FB2A2470J	RK73FB2A2470J	CHIP R	47	J 1/10W
R63		RK73FB2A101J	RK73FB2A101J	CHIP R	100	J 1/10W
R64,68		RK73FB2A470J	RK73FB2A470J	CHIP R	47	J 1/10W
R77,80		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R81,86		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R91,92		RK73FB2A2912J	RK73FB2A2912J	CHIP R	9.1K	J 1/10W
R93,94		RK73FB2A102J	RK73FB2A102J	CHIP R	1.0K	J 1/10W
R95,96		RK73FB2A751J	RK73FB2A751J	CHIP R	750	J 1/10W
R97,98		RK73FB2A152J	RK73FB2A152J	CHIP R	1.5K	J 1/10W
R99,106		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R111,112		RK73FB2A2912J	RK73FB2A2912J	CHIP R	9.1K	J 1/10W
R113,114		RK73FB2A223J	RK73FB2A223J	CHIP R	1.0K	J 1/10W
R115,116		RK73FB2A102J	RK73FB2A102J	CHIP R	750	J 1/10W
R117,118		RK73FB2A751J	RK73FB2A751J	CHIP R	1.5K	J 1/10W
R119,126		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R131,132		RK73FB2A223J	RK73FB2A223J	CHIP R	9.1K	J 1/10W
R133,134		RK73FB2A104J	RK73FB2A104J	CHIP R	1.0K	J 1/10W
R135,136		RK73FB2A103J	RK73FB2A103J	CHIP R	24K	J 1/10W
R137,138		RK73FB2A243J	RK73FB2A243J	CHIP R	22K	J 1/10W
R139,142		RK73FB2A103J	RK73FB2A103J	CHIP R	10K	J 1/10W
R143,144		RK73FB2A223J	RK73FB2A223J	CHIP R	22K	J 1/10W
R145,148		RK73FB2A104J	RK73FB2A104J	CHIP R	100K	J 1/10W
R181		RK73FB2A243J	RK73FB2A243J	CHIP R	24K	J 1/10W
R182		RK73FB2A223J	RK73FB2A223J	CHIP R	33K	J 1/10W
R183		RK73FB2A223J	RK73FB2A223J	CHIP R	10K	J 1/10W
R185,189		RK73FB2A335J	RK73FB2A335J	CHIP R	10K	J 1/10W

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▲ indicates safety critical components.

KR-V990D/V9080

PARTS LIST

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
R451			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R452-456			RK73FB2A103J	CHIP R	10K	J 1/10W
R457			RK73FB2A223J	CHIP R	22K	J 1/10W
R458			RK73FB2A104J	CHIP R	100K	J 1/10W
R460			RK73FB2A224J	CHIP R	220K	J 1/10W
R461			RK73FB2A333J	CHIP R	33K	J 1/10W
R462			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R463			RK73FB2A103J	CHIP R	10K	J 1/10W
R464			RK73FB2A243J	CHIP R	24K	J 1/10W
R465,466			RK73FB2A562J	CHIP R	5.6K	J 1/10W
R467			RK73FB2A151J	CHIP R	150	J 1/10W
R468			RK73FB2A204J	CHIP R	200K	J 1/10W
R469			RK73FB2A471J	CHIP R	470	J 1/10W
R470-473			RK73FB2A470J	CHIP R	47	J 1/10W
R474-476			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R477,478			RK73FB2A334J	CHIP R	330K	J 1/10W
R479			RK73FB2A103J	CHIP R	10K	J 1/10W
R480			RK73FB2A562J	CHIP R	5.6K	J 1/10W
R481			RK73FB2A561J	CHIP R	560	J 1/10W
R482-484			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R485,486			RK73FB2A103J	CHIP R	10K	J 1/10W
R487-490			RK73FB2A470J	CHIP R	47	J 1/10W
R501,502			RK73FB2A104J	CHIP R	100K	J 1/10W
R503,504			RK73FB2A472J	CHIP R	4.7K	J 1/10W
R505,506			RK73FB2A103J	CHIP R	10K	J 1/10W
R507,508			RK73FB2A104J	CHIP R	100K	J 1/10W
R511			RK73FB2A104J	CHIP R	100K	J 1/10W
R513			RK73FB2A472J	CHIP R	4.7K	J 1/10W
R515			RK73FB2A103J	CHIP R	10K	J 1/10W
R517			RK73FB2A104J	CHIP R	100K	J 1/10W
R551,552			RK73FB2A224J	CHIP R	220K	J 1/10W
R553,554			RK73FB2A393J	CHIP R	39K	J 1/10W
R555,556			RK73FB2A303J	CHIP R	30K	J 1/10W
R557,558			RK73FB2A243J	CHIP R	24K	J 1/10W
R561-564			RK73FB2A103J	CHIP R	10K	J 1/10W
R565,566			RK73FB2A104J	CHIP R	100K	J 1/10W
R571,572			RK73FB2A224J	CHIP R	220K	J 1/10W
R572,574			RK73FB2A223J	CHIP R	22K	J 1/10W
R575,576			RK73FB2A103J	CHIP R	10K	J 1/10W
R577,578			RK73FB2A104J	CHIP R	100K	J 1/10W
R581-583			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R591-593			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R601-604			RK73FB2A104J	CHIP R	47K	J 1/10W
R605,606			RK73FB2A102J	CHIP R	1.0K	J 1/10W
R607,608			RK73FB2A473J	CHIP R	47K	J 1/10W
R609,610			RK73FB2A104J	CHIP R	100K	J 1/10W
R611,612			RK73FB2A393J	CHIP R	39K	J 1/10W
R613,614			RD14NB2E470J	RD	47	J 1/4W
R615,616			RK73FB2A103J	CHIP R	10K	J 1/10W
D1-8			DA204U	DIODE		
D10			DA204U	DIODE		
IC1			NJU7311AL	ANALOGUE IC		
IC2		*	XRU0453BC	MOS-IC		
IC3			AK5340-VS	MOS-IC		

L : Scandinavia K : USA P : Canada R : Mexico
Y : PXIFar East, Hawaii T : Europe E : Europe G : Germany
Y : AAFFSEurope X : Australia M : Other Areas C : CHINA
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D : KR-V900D
9 : KR-V9080

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
IC4 -6			AK4319-YM		MOS-IC	
IC7			TC47HC104AF	IC HEX INVERTER SMD		
IC10			NJU7312AL	ANALOGUE IC		
IC11			NJM4580ED	ANALOGUE IC		
IC12-26	Δ		S-806D-Z	ANALOGUE IC		
			UPC7805AHF	IC(VOLTAGE REGULATOR/-5V)		
			UPD78054GC-192	MI-COM IC		
			PD606A	MOS-IC		
IC30	Δ		IC43-44	IC HEX INVERTER SMD		
IC31-34	Δ		IC45	MEMORY IC		
IC41	Δ		IC46	MOS-IC		
IC42	Δ		IC47	MOS-IC		
IC49-50	Δ		IC50	MEMORY IC		
IC51	Δ		TA9005S	IC(VOLTAGE REGULATOR/-5V)		
IC52	Δ		UPC7805HF	IC(VOLTAGE REGULATOR/-5V)		
IC53	Δ		NJM78L05A	IC(VOLTAGE REGULATOR/-5V)		
IC54	Δ		TA78L05AP	IC(VOLTAGE REGULATOR/-5V)		
IC55	Δ		UPC78L05J	IC(VOLTAGE REGULATOR/-5V)		
IC56	Δ		TA7805S	IC(VOLTAGE REGULATOR/-5V)		
IC57	Δ		UPC7805AHF	IC(VOLTAGE REGULATOR/-5V)		
IC58	Δ		NJM565M	IC(DUAL D-TYPE FLIP FLOP)		
IC59	Δ		TC74HC74AF	ANALOGUE IC		
IC60	Δ		NJM565B	IC(DP AMP X2)		
IC61	Δ		2SC1213(B)	TRANSISTOR		
IC62	Δ		2SC1923(R,O)	TRANSISTOR		
IC63	Δ		2SA1123(R,S)	TRANSISTOR		
A1		*	W02-2560-05	OSCILLATING MODULE (46.08MHz)		
A2		*	W02-2544-05	OSCILLATING MODULE (18.432MHz)		
CONTROL UNIT (X11-364X-XX) KR-V9080 only						
C1			C91-0757-05	CERAMIC	1000PF	K
C2-3			CE04KW1H010M	ELECTRO BACKUP-C	1.0UF	50mW
C4			C90-1826-05	ELECTRO BACKUP-C	0.047F	5.5mW
C5			CE04KW1A10M	CERAMIC	1000UF	10mW
C6			C91-0757-05	CERAMIC	1000PF	K
C7			CE04KW1E470M	ELECTRO CERAMIC	47UF	25mW
C8,9			CE04KF1H102K	ELECTRO CERAMIC	1000PF	K
C10,11			CE04KW1E470M	ELECTRO CERAMIC	1000PF	K
C12			CE04KF1H102K	ELECTRO CERAMIC	1000PF	K
C13,14			CE04KW1E470M	ELECTRO CERAMIC	47UF	16mW
C15			C91-0769-05	ELECTRO CERAMIC	1000UF	25mW
C16			C91-0757-05	ELECTRO CERAMIC	1000PF	K
C17			CE04KW1E101M	ELECTRO CERAMIC	1000PF	K
C18-20			CE04KW1E101M	ELECTRO CERAMIC	1000UF	25mW
C21			CR45FB1H102K	CERAMIC	1000PF	K
C101,102			C91-0745-05	CERAMIC	100PF	K
C105-108			C91-0745-05	CERAMIC	100PF	K
C111-114			C91-0745-05	CERAMIC	100PF	K
C115,116			CE04KW1C470M	ELECTRO CERAMIC	47UF	16mW
C117,118			C91-0745-05	ELECTRO CERAMIC	100PF	K
C119,120			CE04KW1H010M	ELECTRO	1.0UF	50mW

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D : KR-V900D
9 : KR-V9080

R : Mexico
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C : CHINA
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KR-V990D/V9080

PARTS LIST

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Les articles dont le numéro de pièce est indiqué dans la colonne **Parts No.** ne sont pas fournis.
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Ref. No.	Acid- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C335,336	C337		CE04KWM1V4F7M	ELECTRO	4.7UF	35WV
	C338		CQ93FMG1H153J	MYLAR	0.015UF	J
	C339		CQ93FMG1H223J	MYLAR	0.022UF	J
	C340		CK45FB1H821K	CERAMIC	820PF	K
			CK45FB1H102K	CERAMIC	1000PF	K
C341	C342		CQ93FMG1H223J	MYLAR	0.022UF	J
	C343		CQ93FMG1H2423J	MYLAR	0.024UF	J
	C344		CC45FSL1H1B1U	ELECTRO	4.7UF	35WV
	C345,346		CE04KWM1V4F7M	ELECTRO	180PF	J
			CK45FF1H103Z	ELECTRO	4.7UF	35WV
C347	C348		CE04KWM1V4F7M	ELECTRO	0.010UF	Z
	C349,350		CK45FB1H391M	CERAMIC	4.7UF	35WV
	C351		CC45FSL1H1390J	CERAMIC	390PF	K
	C352		CF92FV1H184J	CERAMIC	39PF	J
C353	C355,356		C91-0745-05	MF-C	0.18UF	J
	C357,358		CC45FSL1H121J	CERAMIC	100PF	K
	C359-361		CQ93FMG1H473J	MYLAR	120PF	J
	C362		CK45FSL1H101J	CERAMIC	0.047UF	J
C363	C367,368		CE04KWM0J331M	ELECTRO	6.3WF	J
	C369		CC45FSL1H104J	CERAMIC	3300PF	K
	C370,371		CK45FB1H332K	ELECTRO	100PF	J
	C372		CE04KWM1C100M	ELECTRO	3300UF	6.3WF
C373	C374		CQ93FMG1H104J	MYLAR	0.10UF	J
	C375,376		CK45FB1H102K	CERAMIC	1000PF	K
	C377,378		CK45FF1H103Z	ELECTRO	0.010UF	Z
	C386		CE04KWM1C470M	ELECTRO	47UF	16WV
			CC45FSL1H101J	CERAMIC	10UF	J
C387-389	C391		CE04KWM1V4F7M	ELECTRO	4.7UF	35WV
	C393		CE04KWM1V220M	ELECTRO	22UF	35WV
	C394		CE04KWM1H010M	ELECTRO	1.0UF	50WF
	C395		CK45FF1H103Z	CERAMIC	0.10UF	J
C398,399	C401,402		CE04KWM1V4F7M	ELECTRO	0.010UF	Z
	C405,406		C91-0745-05	CERAMIC	100PF	K
	C409,410		C91-0745-05	CERAMIC	100PF	K
	C413,414		C91-0745-05	CERAMIC	100PF	K
C417,418	C422		C91-0745-05	CERAMIC	100PF	K
	C423,424		CC45FSL1H390J	MYLAR	390PF	J
	C425,426		CE04KWM1C100M	ELECTRO	10UF	16WV
	C427,428		CK45FSL1H121J	CERAMIC	220PF	J
			CE04KWM1A101M	ELECTRO	100UF	10WF
C429,430	C431,432		CK45FB1H102K	CERAMIC	1000PF	K
	C433,434		CQ93FMG1H123J	MYLAR	0.012UF	J
	C435,436		CQ93FMG1H332J	MYLAR	3300PF	J
	C437,438		CE04KWM1V4F7M	ELECTRO	4.7UF	35WV
			CK45FF1H103Z	CERAMIC	0.010UF	Z
C439	C443		CK45FB1H102K	CERAMIC	1000PF	K
	C445,446		C91-0745-05	CERAMIC	100PF	K
			CK45FF1H103Z	CERAMIC	0.010UF	Z
CN101	*		E40-9830-05	SOCKET FOR PIN ASSY (14P)		

Δ Indicates safety critical components.

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C125,124	C125,124		C91-0729-05	CERAMIC ELECTRO	22PF J	16WW
C125,124	C125,124		CE04KKW1C470M	ELECTRO	47UF 1.0UF	50WW
C127,128	C127,128		CE04KKW1H10M	ELECTRO	470UF 0.47UF	50WW
C129,130	C129,130		CE04KKW1H47RM	ELECTRO	4.7UF 0.47UF	35WW
C131-134	C131-134		CE04KKW1V4R7M	ELECTRO	4.7UF 0.47UF	35WW
C135,136	C135,136		C91-0745-05	CERAMIC CERAMIC	100PF 22PF	K J
C137,138	C137,138		CE04KKW1H2R2M	ELECTRO	2.2UF 0.47UF	50WW
C140,141	C140,141		CE04KKW1HR47M	ELECTRO	4.7UF 0.47UF	50WW
C141,142	C141,142		CE04KKW1V4R7M	ELECTRO	4.7UF 0.47UF	35WW
C143-146	C143-146		C91-0745-05	CERAMIC CERAMIC	100PF 22PF	K J
C147,148	C147,148		CE04KKW1H101M	ELECTRO	1.0UF 0.47UF	50WW
C149,150	C149,150		CE04KKW1H47RM	ELECTRO	0.47UF 0.47UF	50WW
C151,152	C151,152		CE04KKW1V4R7M	ELECTRO	4.7UF 0.47UF	35WW
C153,154	C153,154		C91-0729-05	CERAMIC CERAMIC	100PF 22PF	K J
C155,156	C155,156		CK45FF1H103Z	CERAMIC CHIP	0.010UF 0.010UF	Z
C159,160	C159,160		CK45FB1H471K	CERAMIC CHIP	0.010UF 0.010UF	Z
C161,162	C161,162		C91-0753-05	CERAMIC CHIP	0.010UF 0.010UF	Z
C163,164	C163,164		C91-0745-05	CERAMIC CHIP	0.010UF 0.010UF	Z
C165,170	C165,170		CE04KKW1C470M	ELECTRO	47UF 0.010UF	16WW
C174,175	C174,175		CK45FF1H103Z	CERAMIC CHIP	0.010UF 0.010UF	Z
C176,177	C176,177		CK45FB1H471K	CERAMIC CHIP	0.010UF 0.010UF	Z
C178	C178		C91-0753-05	CERAMIC CHIP	0.010UF 0.010UF	Z
C183	C183		C91-0745-05	CERAMIC CHIP	0.010UF 0.010UF	Z
C184,185	C184,185		CE04KKW1C470M	ELECTRO	47UF 0.010UF	16WW
C186	C186		CC45FSL1H2R2J	CERAMIC CERAMIC	220PF 2.7UF	J
C189,190	C189,190		CK45FSL1H103Z	ELECTRO	0.010UF 0.010UF	35WW
C191	C191		CE04KKW1V4R7M	ELECTRO	4.7UF 0.010UF	10WW
C193,198	C193,198		CE04HW1A220M	NP-ELEC	22UF 0.010UF	10WW
C199	C199		CE04HW1C100M	ELECTRO	10UF 0.010UF	16WW
C200	C200		CE04HW1A220M	NP-ELEC	22UF 0.010UF	10WW
C203-208	C203-208		CC093FMG1H104J	MYLAR	0.10UF 0.10UF	16WW
C209,210	C209,210		CE04HW1V4R7M	ELECTRO	4.7UF 0.010UF	35WW
C301,302	C301,302		CC45FSL1H101J	CERAMIC ELECTRO	100PF 2.2UF	J
C303,304	C303,304		CE04KW1H2R2M	ELECTRO	47UF 0.010UF	50WW
C305,306	C305,306		CC45FSL1V4R7M	ELECTRO	4.7UF 0.010UF	35WW
C307-310	C307-310		CC45FSL1H331J	CERAMIC	330PF 0.010UF	J
C311,312	C311,312		CE04KW1H2R2M	ELECTRO	2.2UF 0.010UF	50WW
C313,314	C313,314		CE04KW1V4R7M	ELECTRO	4.7UF 0.010UF	35WW
C315	C315		CC45FSL1H331J	CERAMIC	330PF 0.010UF	J
C316	C316		CE04KW1H2R2M	ELECTRO	2.2UF 0.010UF	50WW
C317	C317		CE04KW1A470M	ELECTRO	47UF 0.010UF	10WW
C318	C318		CC093FMG1H104J	MYLAR	0.10UF 0.10UF	J
C319	C319		CC45FSL1H101J	CERAMIC	100PF 0.10UF	J
C321	C321		CC093EMG1H104J	CERAMIC	100PF 0.010UF	J
C322	C322		CC45FSL1H101J	CERAMIC	100PF 0.010UF	J
C323-324	C323-324		CC093EMG1H23J	MYLAR	0.022UF 0.022UF	J
C325-328	C325-328		CC093EMG1H23J	MYLAR	0.022UF 0.022UF	J
C329	C329		CC093EMG1H23J	MYLAR	0.022UF 0.022UF	J
C330	C330		CK45FB1H2D1K	CERAMIC	820PF K	K

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PARTS LIST

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Ref. No	Add- res	New Parts	Parts No.	Description	Desti- nation	Re- marks
CN102		*	E40-9833-05	SOCKET FOR PIN ASSY (17P)		
CN204,205		*	E40-4804-05	SOCKET FOR PIN ASSY (30P)		
CN206		*	E40-9841-05	PIN ASSY		
CN207		*	E40-9850-05	PIN ASSY		
CN208		*	E40-9845-05	PIN ASSY		
CN209		*	E40-9849-05	PIN ASSY		
CN210		*	E40-9843-05	PIN ASSY		
CN301		*	E40-9826-05	SOCKET FOR PIN ASSY (10P)		
CN302		*	E40-9832-05	SOCKET FOR PIN ASSY (16P)		
CN303	J1.2	*	E40-9828-05	SOCKET FOR PIN ASSY (12P)		
	J3		E63-0139-15	PHONE JACK(6P)VIDEO1/2(TV/LD)		
	J4.5		E11-0188-05	MINIATURE PHONE JACK(2P)SYSTEM		
	J6	*	E63-0139-15	PHONE JACK(6P)TAPE1/2(CD)PHONE		
L1.2	X1		L79-0799-05	LC FILTER		
	X2		L78-0267-05	RESONATOR (11.2896MHz)		
CP1			R90-0850-05	MULTI-COMP	100KX3 (4.194MHz)	1/6W
CP2			R90-0492-05	MULTI-COMP	100KX8 (4.194MHz)	1/6W
CP4			R90-0482-05	MULTI-COMP	100KX4 (4.194MHz)	1/6W
CP5			R90-0493-05	MULTI-COMP	100KX9 (4.194MHz)	1/6W
CP6..7			R80-0500-05	MULTI-COMP	100KX6 (4.194MHz)	1/4W
CP8			R90-0855-05	MULTI-COMP	100KX5 (4.194MHz)	1/4W
R26			RD14NBZ101J	RD	100 2.2K	1/4W
	R32		RD14NBZ222J	RD	330 680	1/4W
	R36..37		RS14KB3D31J	FL-PROOF RS	2W	
			RS14KB3D68J	FL-PROOF RS	680	
R38			RS14KB3D47J	FL-PROOF RS	470	2W
R40			RS14KB3D47J	FL-PROOF RS	470	2W
	F41		RS14KB3D39J	FL-PROOF RS	390	2W
	F42		RS14KB3D38J	FL-PROOF RS	330	2W
	R45		RS14KB3D33J	FL-PROOF RS	330	2W
R172,173			RD14NBZ2100J	RD	10	1/4W
R199,200			RD14NBZ470J	RD	47	1/4W
	R392,394		RS14KB3D82J	FL-PROOF RS	82	2W
			RD14NBZ2100J	RD	10	1/4W
D105,106			HSS104	DIODE		
D105,106			ISS133	DIODE		
D107			RD4.7ES(B)	ZENER DIODE		
D108			HZS5.1N(B2)	ZENER DIODE		
D108			RD5.1ES(B2)	ZENER DIODE		
D201,202			HSS104	DIODE		
D201,202			ISS133	DIODE		
D204,206			HSS104	DIODE		
D204,206			ISS133	DIODE		
D207,208			S568BB	DIODE		
D207,208			1SR139-100	ZENER DIODE		
D209			HZS16(N(B2)	ZENER DIODE		
D209			RD16ES(B2)	ZENER DIODE		
D210			HZS13N(B2)	ZENER DIODE		
D210	D211		RD13ES(B2)	ZENER DIODE		

L: Scandinavia **K**: USA **P**: Canada **R**: Mexico
Y: PX(Far East, Hawaii) **T**: Europe **E**: Europe **G**: Germany
Y: AAFFES(Europe) **X**: Australia **M**: Other Areas **C**: China

indicates safety critical components

Ref. No.	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
D211	D212-217		RD15ES(B)	ZENER DIODE		
D212	D212-217		HSS104	DIODE		
D301	D301-309		ISS133	DIODE		
D313	D313-316		HSS104	DIODE		
D313	D313-316		ISS133	DIODE		
D318	D318-321		HSS104	DIODE		
D318	D318-321		ISS133	DIODE		
D327			HSS104	DIODE		
D327			ISS133	DIODE		
IC1			NU7313AL	ANALOGUE IC		
IC2			LC7536R	ANALOGUE IC		
IC3			LC7536	ANALOGUE IC		
IC4			LC7536R	ANALOGUE IC		
IC5	IC5.6		NJM4565L-D	ANALOGUE IC		
IC7	IC7.8		NJM4580L	IC(IOP AMP X2)		
IC9	IC9.10		NJM4565L-D	ANALOGUE IC		
IC11			NJM4580D-D	IC(IOP AMP X2)		
IC12			NJM4565L-D	ANALOGUE IC		
IC201		*	UPD78058G-C-170	MI-CCM IC		
IC202			S-806D-Z	ANALOGUE IC		
IC301	IC301.302		NUM4565L	ANALOGUE IC		
IC303	IC303.304		NUM4580L	IC(IOP AMP X2)		
IC305	IC305.306		NJM072BL	IC(IOP AMP)		
IC305	IC307-313		NJM2082L	ANALOGUE IC		
IC314			NJM4565L	ANALOGUE (CANALOG SWITCH X6)		
IC315			TC9215P	(CANALOG PROLOGIC)		
IC316			YSS215-F	(IC8bit MICROPROCESSOR)		
IC317			HM65256BLF8-10			
IC318			NU7311AL	ANALOGUE IC		
IC319			NU7312AL	ANALOGUE IC		
IC320			NJM4580D-D	IC(IOP AMP X2)		
Q101			NU78105A	IC(VOLTAGE REGULATOR/ +5V)		
			2SA1048(Y.GR)	TRANSISTOR		
			2SC1309(A,C,R)	TRANSISTOR		
			2SC2245B(Y.GR)	TRANSISTOR		
			2SC3311A(C,R)	TRANSISTOR		
			2SD2012	TRANSISTOR		
			2SD2061	TRANSISTOR		
			2SC2878(B)	TRANSISTOR		
			2SC2458(Y.GR)	TRANSISTOR		
			2SC3311A(C,R)	TRANSISTOR		
			2SA1048(Y.GR)	TRANSISTOR		
			2SA1309A(C,R)	TRANSISTOR		
			2SC2458(Y.GR)	TRANSISTOR		
			2SC3311A(C,R)	TRANSISTOR		
			2SA1048(Y.GR)	TRANSISTOR		
			2SA1309A(C,R)	TRANSISTOR		
			2SD2012	TRANSISTOR		
			2SD2061	TRANSISTOR		
			2SC2458(Y.GR)	TRANSISTOR		
			2SC3311A(C,R)	TRANSISTOR		
			2SA1048(Y.GR)	TRANSISTOR		
			2SA1309A(C,R)	TRANSISTOR		
			2SD2012	TRANSISTOR		
			2SD2061	TRANSISTOR		

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↑ indicates safety critical components

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PARTS LIST

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* New Parts
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Ref. No	New Part No	Parts No.	Description	Desti-nation	Re-marks	Ref. No	New Part No	Parts No.	Description	Desti-nation	Re-marks
Q209		2SC245BY(GR)	TRANSISTOR			C188		CQ93FMG1H101K	MYLAR	100PF	K
Q209		2SC3311A(Q,R)	TRANSISTOR			C189	190	CC45FSL1H221J	CERAMIC	220PF	J
Q211		2SD0012	TRANSISTOR			C191	192	CK45FT1H103Z	CERAMIC	0.010UF	Z
Q211		2SDW1C470M	TRANSISTOR			C195	196	CE04KWK1H103M	ELECTRO	47UF	16WV
Q301-305		2SC2878(B)	TRANSISTOR			C197	198	CQ93FMG1H103U	MYLAR	0.010UF	J
SUB-CIRCUIT UNIT (X13-735X-XX) KR-V990D only											
C15..16		CE04KWK1V4R7M	ELECTRO	4.7UF	35WV	C199		CE04HW1A220M	NP-ELEC	220UF	K
C17..18		CC45FSL1H101J	CERAMIC	100PF	J	C200		CE04HW1H100M	ELECTRO	10UF	J
C19..20		CE04KWK1C220M	CERAMIC	22PF	J	C201		CE04KWK1C470M	NP-ELEC	0.11UF	Z
C21..22		CF92FV1H104J	ELECTRO	0.10UF	J	C202..208		CE04KWK1H03M	ELECTRO	47UF	16WV
C32			MF-C			C209..210		CF92FV1H104J	BACKUP-C	0.10UF	J
C33						C211..216		C91-0745-05	CERAMIC	100PF	K
C34						C217		CE04HW1E4R7M	NP-ELEC	4.7UF	25WV
C37..38						C301		CE04KWK1H010M	ELECTRO	1.0UF	50WV
C39..40						C302		CE04KWK1J021M	ELECTRO	220UF	6.3WV
C43						C303		C90-1826-05		0.04UF	5.5WV
C44											
C45											
C46											
C47											
C48											
C49..50											
C51..54											
C101..102											
C105..108											
C11..114											
C117..118											
C119..120											
C121..122											
C123..124											
C125..126											
C127..128											
C129..130											
C131..134											
C135..136											
C137..138											
C139..140											
C141..142											
C143..146											
C147..148											
C149..150											
C151..152											
C153..154											
C155..158											
C159..160											
C161..162											
C163..164											
C165..170											
C171..176											
C177											
C178											
C179..180											
C183..186											
R : Mexico P : Canada D : KR-V990D											
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Q209		2SC245BY(GR)	TRANSISTOR			C188		CQ93FMG1H101K	MYLAR	100PF	K
Q209		2SC3311A(Q,R)	TRANSISTOR			C189	190	CC45FSL1H221J	CERAMIC	220PF	J
Q211		2SD0012	TRANSISTOR			C191	192	CK45FT1H103Z	CERAMIC	0.010UF	Z
Q211		2SDW1C470M	TRANSISTOR			C195	196	CE04KWK1H103M	ELECTRO	47UF	16WV
Q301-305		2SC2878(B)	TRANSISTOR			C197	198	CQ93FMG1H103U	MYLAR	0.010UF	J
SUB-CIRCUIT UNIT (X13-735X-XX) KR-V990D only											
C15..16		CE04KWK1V4R7M	ELECTRO	4.7UF	35WV	C199		CE04HW1A220M	NP-ELEC	220UF	K
C17..18		CC45FSL1H101J	CERAMIC	100PF	J	C200		CE04HW1H100M	ELECTRO	10UF	J
C19..20		CE04KWK1C220M	CERAMIC	22PF	J	C201		CE04KWK1C470M	NP-ELEC	0.11UF	Z
C21..22		CF92FV1H104J	ELECTRO	0.10UF	J	C202..208		CE04KWK1H03M	ELECTRO	47UF	16WV
C32			MF-C			C209..210		CF92FV1H104J	BACKUP-C	0.10UF	J
C33						C211..216		C91-0745-05	CERAMIC	100PF	K
C34						C217		CE04HW1E4R7M	NP-ELEC	4.7UF	25WV
C37..38						C301		CE04KWK1H010M	ELECTRO	1.0UF	50WV
C39..40						C302		CE04KWK1J021M	ELECTRO	220UF	6.3WV
C43						C303		C90-1826-05		0.04UF	5.5WV
C44											
C45											
C46											
C47											
C48											
C49..50											
C51..54											
C101..102											
C105..108											
C11..114											
C117..118											
C119..120											
C121..122											
C123..124											
C125..126											
C127..128											
C129..130											
C131..134											
C135..136											
C137..138											
C139..140											
C141..142											
C143..146											
C147..148											
C149..150											
C151..152											
C153..154											
C155..158											
C159..160											
C161..162											
C163..164											
C165..170											
C171..176											
C177											
C178											
C179..180											
C183..186											
R : Mexico P : Canada D : KR-V990D											
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Ref. No.	Alt.- ress.	Parts No.	Description	Desti- nation	Re- marks		
Ref. No.	Alt.- ress.	Parts No.	Parts No.	Parts No.	Description	Desti- nation	Re- marks
DISPLAY UNIT (X14-414X-XX)							
D3	D3	HZS16N(B) RD16ES(B)	ZENER DIODE ZENER DIODE	Q103 Q105-110 Q111 Q111	2SA1309AQ(R) 2SC2987(B) 2SA1048(Y,GR) 2SA1309A(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR	D
D4.5	D4.5	S5688B 1SR139-100	ZENER DIODE DIODE	C1.2	CEO4KW1V4R7M C9-1488-05	ELECTRO MF	35W 250VAC
D4.7	D4.7	HZS8.4N(B2) RD8.2ES(B2)	ZENER DIODE ZENER DIODE	C4	C9-0769-05 C45FS1H101J	CERAMIC CERAMIC	K
D6.7	D6.7	HSS104A	ZENER DIODE	C5-7	C9-0745-05	CERAMIC	J
D8	D8	ISS131 S5688B	ZENER DIODE DIODE	C8-11	CEO4KW1C330M CK45FF1H1032Z	ELECTRO ELECTRO	16W 2
D9	D9	ISS131 HSS104A	ZENER DIODE DIODE	C13-16	CE04KW1V4R7M CK45FB1H1032Z	ELECTRO ELECTRO	35W 35W
D10	D10	ISS131 HSS104A	ZENER DIODE DIODE	C17-18	CE04KW1V4R7M CK45FS1LH222J	ELECTRO CERAMIC	J
D10.5,106	D10.5,106	ISS131 HSS104A	ZENER DIODE DIODE	C19-20	CE04KW1C100M CK45FS1LH222J	ELECTRO CERAMIC	J
D10.7	D10.7	HZS4.7N(B)	ZENER DIODE	C21-22	CE04KW1V4R7M CK45FB1H1561K	ELECTRO ELECTRO	16W 35W
D108	D108	RD4.7ES(B) HDS5.1ES(B2)	ZENER DIODE ZENER DIODE	C23-24	CE04KW1V4R7M CK45FB1H1561K	ELECTRO ELECTRO	K
D109-112	D109-112	HSS104A ISS131	ZENER DIODE DIODE	C25-26	CE04KW1V4R7M CK45FB1H1561K	ELECTRO ELECTRO	4.7UF 4.7UF
D109-112	D109-112	HSS104A ISS131	ZENER DIODE DIODE	C27-28	CE04KW1V4R7M CK45FB1H1561K	ELECTRO ELECTRO	10UF 10UF
D302-306	D302-306	ISS131 HSS104A	ZENER DIODE ZENER DIODE	C29-30	CE04KW1V4R7M CK45FB1H1561K	ELECTRO ELECTRO	0.038UF 0.038UF
D311-317	D311-317	ISS131 HSS104A	ZENER DIODE ZENER DIODE	C31-32	Q93FMG1H103J Q93FMG1H103J	MYLAR MYLAR	J
I1	*	UPD78056GC-224	MI-COM IC	C33-34	Q93FMG1H103J Q94FB1H471K	MYLAR CHI/C	J
I2	I2	S-8060-Z	ANALOGUE IC (ANALOG SWITCH X6)	C35-36	Q93FMG1H103J Q91-0769-05	MYLAR CERAMIC	J
I3	I3	TC9215P	ANALOGUE IC (OP AMP X2)	C38-42	Q91-0769-05 C43-44	MYLAR CERAMIC	K
I4	I4	NJM4580L NJU7313AL	ANALOGUE IC ANALOGUE IC	C45-46	C90-3224-05 CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
I5	I5	LC7536R	ANALOGUE IC	C47-48	C90-3224-05 CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
I6	I6	LC7536 NJM4580L	ANALOGUE IC ANALOGUE IC	C49-50	C90-3224-05 CK45FF1H1032Z	ELECTRO CERAMIC	22PF 22PF
I7	I7	NJM4565L-D	ANALOGUE IC	C51-52	C91-0729-05 C91-0757-05	CERAMIC CERAMIC	K
I8	I8	NJM4565L-D	ANALOGUE IC	C53	C91-0769-05 C94FF1H1032Z	CERAMIC CERAMIC	K
I9	I9	IC105,106	ANALOGUE IC (OP AMP X2)	C54	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
I10	I10	IC107,108	ANALOGUE IC (OP AMP X2)	C55-56	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
I11	I11	IC109,110	ANALOGUE IC (OP AMP X2)	C57	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q1.2	Q1.2	2SD2061	IC105,106	C58	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q3	Q3	2SC2458(Y,GR)	TRANSISTOR	C59	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q4	Q4	2SC3311A(Q,R)	TRANSISTOR	C60	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q5	Q5	2SA1309A(Q,R)	TRANSISTOR	C61	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q6	Q6	2SC2458(Y,GR)	TRANSISTOR	C62	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q7	Q7	2SC2458(Y,GR)	TRANSISTOR	C63	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q8.9	Q8.9	2SC3311A(Q,R)	TRANSISTOR	C64	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q10.11	Q10.11	2SC2458(Y,GR)	TRANSISTOR	C65	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q12.13	Q12.13	2SC3311A(Q,R)	TRANSISTOR	C66	C90-3225-05 CK45FF1H1032Z	ELECTRO CERAMIC	E
Q13	Q13	2SA1048(Y,GR)	TRANSISTOR	C100-119	CE04KW1V4R7M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
Q14	Q14	2SC2458(Y,GR)	TRANSISTOR	C120-123	CE04KW1V4R7M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
Q15	Q15	2SC3311A(Q,R)	TRANSISTOR	C124-126	CE04KW1V4R7M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
Q16	Q16	2SC2458(Y,GR)	TRANSISTOR	C127	CE04KW1C100M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
Q17	Q17	2SC3311A(Q,R)	TRANSISTOR	C128	CE04KW1E471M CK45FF1H1032Z	ELECTRO CERAMIC	25W Z
Q18	Q18	2SA1309A(Q,R)	TRANSISTOR	C130-131	CE04KW1C470M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z
Q19	Q19	2SC2034L(K)	TRANSISTOR	C132	CE04KW1C470M CK45FF1H1032Z	ELECTRO CERAMIC	0.010UF 0.010UF
Q20	Q20	2SA1048(Y,GR)	TRANSISTOR	C133	CE04KW1C470M CK45FF1H1032Z	ELECTRO CERAMIC	47UF 0.010UF
Q21	Q21	2SC2458(Y,GR)	TRANSISTOR	C134	CE04KW1C470M CK45FF1H1032Z	ELECTRO CERAMIC	16W Z

R : Mexico D : KR-V990D
P : Canada E : Europe G : Germany
T : Europe F : Asia H : Australia M : Other Areas
Y : AAFF(Europe) L : Scandinavia K : USA
Y : AAFF(Europe) T : Europe F : Asia H : Australia M : Other Areas
Y : AAFF(Europe) X : Europe U : Asia
Y : AAFF(Europe) V : Asia W : Asia
Y : AAFF(Europe) Z : Asia

D : KR-V990D
g : KR-V9080
A indicates safety critical components.

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Ref. No.	Alt.- ress.	Parts No.	Description	Desti- nation	Re- marks
D3	D3	HZS16N(B) RD16ES(B)	ZENER DIODE ZENER DIODE	Q103	2SA1309AQ(R)
D4.5	D4.5	S5688B 1SR139-100	ZENER DIODE DIODE	Q105-110	2SC2987(B)
D4.7	D4.7	HSS104A	ZENER DIODE	Q111	2SA1048(Y,GR)
D6.7	D6.7	ISS131 S5688B	ZENER DIODE DIODE	Q111	2SA1309A(Q,R)
D8	D8	ISS131 HSS104A	ZENER DIODE DIODE	C1.2	2SC2458(Y,GR)
D9	D9	HSS104A	ZENER DIODE	C4	2SC3311A(Q,R)
D10	D10	ISS131 HSS104A	ZENER DIODE DIODE	C5-7	2SC2458(Y,GR)
D10.5,106	D10.5,106	ISS131 HSS104A	ZENER DIODE DIODE	C8-11	2SA1309A(Q,R)
D10.7	D10.7	HZS4.7N(B)	ZENER DIODE	C13-16	2SC2458(Y,GR)
D108	D108	RD4.7ES(B) HDS5.1ES(B2)	ZENER DIODE ZENER DIODE	C17-18	2SC3311A(Q,R)
D109-112	D109-112	HSS104A ISS131	ZENER DIODE DIODE	C19-20	2SA1309A(Q,R)
D109-112	D109-112	HSS104A ISS131	ZENER DIODE DIODE	C21-22	2SC2458(Y,GR)
D302-306	D302-306	ISS131 HSS104A	ZENER DIODE ZENER DIODE	C23-24	2SC3311A(Q,R)
D311-317	D311-317	ISS131 HSS104A	ZENER DIODE ZENER DIODE	C25-26	2SA1309A(Q,R)
I1	*	UPD78056GC-224	MI-COM IC	C27-28	2SC2458(Y,GR)
I2	I2	S-8060-Z	ANALOGUE IC (ANALOG SWITCH X6)	C29-30	2SC3311A(Q,R)
I3	I3	TC9215P	ANALOGUE IC (OP AMP X2)	C31-32	2SA1309A(Q,R)
I4	I4	NJM4580L NJU7313AL	ANALOGUE IC ANALOGUE IC	C33-34	2SC2458(Y,GR)
I5	I5	LC7536R	ANALOGUE IC	C35-36	2SC3311A(Q,R)
I6	I6	LC7536 NJM4580L	ANALOGUE IC ANALOGUE IC	C38-42	2SA1309A(Q,R)
I7	I7	NJM4565L-D	ANALOGUE IC	C43-44	2SC2458(Y,GR)
I8	I8	NJM4565L-D	ANALOGUE IC	C45-46	2SC3311A(Q,R)
I9	I9	IC105,106	ANALOGUE IC (OP AMP X2)	C47-48	2SA1309A(Q,R)
I10	I10	IC107,108	ANALOGUE IC (OP AMP X2)	C49-50	2SC2458(Y,GR)
I11	I11	IC109,110	ANALOGUE IC (OP AMP X2)	C51-52	2SC3311A(Q,R)
Q1.2	Q1.2	2SD2061	IC105,106	C53	2SA1309A(Q,R)
Q3	Q3	2SC2458(Y,GR)	TRANSISTOR	C54	2SC2458(Y,GR)
Q4	Q4	2SC3311A(Q,R)	TRANSISTOR	C55	2SC3311A(Q,R)
Q5	Q5	2SA1309A(Q,R)	TRANSISTOR	C56	2SC2458(Y,GR)
Q6	Q6	2SC2458(Y,GR)	TRANSISTOR	C57	2SC3311A(Q,R)
Q7	Q7	2SC2458(Y,GR)	TRANSISTOR	C58	2SC2458(Y,GR)
Q8.9	Q8.9	2SC3311A(Q,R)	TRANSISTOR	C59	2SC3311A(Q,R)
Q10.11	Q10.11	2SC2458(Y,GR)	TRANSISTOR	C60	2SC2458(Y,GR)
Q12.13	Q12.13	2SC3311A(Q,R)	TRANSISTOR	C61	2SC3311A(Q,R)
Q13	Q13	2SA1048(Y,GR)	TRANSISTOR	C62	2SC2458(Y,GR)
Q14	Q14	2SC2458(Y,GR)	TRANSISTOR	C63	2SC3311A(Q,R)
Q15	Q15	2SC3311A(Q,R)	TRANSISTOR	C64	2SC2458(Y,GR)
Q16	Q16	2SA1048(Y,GR)	TRANSISTOR	C65	2SC3311A(Q,R)
Q17	Q17	2SC2458(Y,GR)	TRANSISTOR	C66	2SC2458(Y,GR)
Q18	Q18	2SC3311A(Q,R)	TRANSISTOR	C100-119	2SC2458(Y,GR)
Q19	Q19	2SA1309A(Q,R)	TRANSISTOR	C120-123	2SC3311A(Q,R)
Q20	Q20	2SC2034L(K)	TRANSISTOR	C124-126	2SC2458(Y,GR)
Q21	Q21	2SA1048(Y,GR)	TRANSISTOR	C127	2SC2458(Y,GR)
Q22	Q22	2SC2458(Y,GR)	TRANSISTOR	C128	2SC3311A(Q,R)
Q23	Q23	2SA1309A(Q,R)	TRANSISTOR	C130-131	2SC2458(Y,GR)
Q24	Q24	2SC2458(Y,GR)	TRANSISTOR	C132	2SC3311A(Q,R)
Q25	Q25	2SC3311A(Q,R)	TRANSISTOR	C133	2SC2458(Y,GR)
Q26	Q26	2SA1048(Y,GR)	TRANSISTOR	C134	2SC3311A(Q,R)
Q27	Q27	2SC2458(Y,GR)	TRANSISTOR		
Q28	Q28	2SC3311A(Q,R)	TRANSISTOR		
Q29	Q29	2SA1048(Y,GR)	TRANSISTOR		
Q30	Q30	2SC2458(Y,GR)	TRANSISTOR		
Q31	Q31	2SC3311A(Q,R)	TRANSISTOR		
Q32	Q32	2SA1048(Y,GR)	TRANSISTOR		
Q33	Q33	2SC2458(Y,GR)	TRANSISTOR		
Q34	Q34	2SC3311A(Q,R)	TRANSISTOR		
Q35	Q35	2SA1048(Y,GR)	TRANSISTOR		
Q36	Q36	2SC2458(Y,GR)	TRANSISTOR		
Q37	Q37	2SC3311A(Q,R)	TRANSISTOR		
Q38	Q38	2SA1048(Y,GR)	TRANSISTOR		
Q39	Q39	2SC2458(Y,GR)	TRANSISTOR		
Q40	Q40	2SC3311A(Q,R)	TRANSISTOR		
Q41	Q41	2SA1048(Y,GR)	TRANSISTOR		
Q42	Q42	2SC2458(Y,GR)	TRANSISTOR		
Q43	Q43	2SC3311A(Q,R)	TRANSISTOR		
Q44	Q44	2SA1048(Y,GR)	TRANSISTOR		
Q45	Q45	2SC2458(Y,GR)	TRANSISTOR		
Q46	Q46	2SC3311A(Q,R)	TRANSISTOR		
Q47	Q47	2SA1048(Y,GR)	TRANSISTOR		
Q48	Q48	2SC2458(Y,GR)	TRANSISTOR		
Q49	Q49	2SC3311A(Q,R)	TRANSISTOR		
Q50	Q50	2SA1048(Y,GR)	TRANSISTOR		
Q51	Q51	2SC2458(Y,GR)	TRANSISTOR		
Q52	Q52	2SC3311A(Q,R)	TRANSISTOR		
Q53	Q53	2SA1048(Y,GR)	TRANSISTOR		
Q54	Q54	2SC2458(Y,GR)	TRANSISTOR		
Q55	Q55	2SC3311A(Q,R)	TRANSISTOR		
Q56	Q56	2SA1048(Y,GR)	TRANSISTOR		
Q57	Q57	2SC2458(Y,GR)	TRANSISTOR		
Q58	Q58	2SC3311A(Q,R)	TRANSISTOR		
Q59	Q59	2SA1048(Y,GR)	TRANSISTOR		
Q60	Q60	2SC2458(Y,GR)	TRANSISTOR		
Q61	Q61	2SC3311A(Q,R)	TRANSISTOR		
Q62	Q62	2SA1048(Y,GR)	TRANSISTOR		
Q63	Q63	2SC2458(Y,GR)	TRANSISTOR		
Q64	Q64	2SC3311A(Q,R)	TRANSISTOR		
Q65	Q65	2SA1048(Y,GR)	TRANSISTOR		
Q66	Q66	2SC2458(Y,GR)	TRANSISTOR		
Q67	Q67	2SC3311A(Q,R)	TRANSISTOR		

KR-V990D/V9080

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C135		CE04KW1C331M	ELECTRO CERAMIC	CN8.4		E40-4738-05		SOCKET FOR PIN ASSY (10P)			
C136		CK45FF1H223Z	CERAMIC	CN6.6		* E40-4730-05		PIN ASSY (10P)			
C137		CK45FB1H222K	CERAMIC	CN7.8		* E40-9824-05		PHONO JACK(4P/VIDEO/7VLD)			
C138		CE04KW1V4R7M	ELECTRO	J1		* E63-0163-05		PHONO JACK(3P/VIDEO/MONITOR)			
C139-141		CC45FSL1H01J	CERAMIC	J2		* E63-0162-05		CYLINDRICAL RECEPTACLE(3P)			
C142		CE04KW1V4R7M	ELECTRO	J3..4		E66-0011-05		CYLINDRICAL RECEPTACLE(1UH)			
C143		CF92FV1H105J	MF-C	J5		E66-0016-05		MINIATURE PHONE JACK(2P/REPEAT)			
C145		CC45FSL1H220J	CERAMIC	J6		E11-0291-05		PHONE JACK(3P/VIDEOS/AUDIO)			
C146		CC45FSL1H270J	CERAMIC	J7		E63-0129-05		CYLINDRICAL RECEPTACLE(1P/SVID)			
C148		CC45FCH1H050C	CERAMIC	J8		E66-0012-05		PHONE JACK			
C149		CC45FCH1H220J	CERAMIC	J9		E11-0272-05		WIRE CLAMPER			
C150		CF92FV1H105J	MF-C	J12		J11-0808-05					
C151		CE04KW1HR2M	ELECTRO	J1..3		L40-1091-17					
C152		CK45FF1H223Z	CERAMIC	L4..5		L40-1001-17					
C153		CK45FB1H332K	CERAMIC	L6..13		L52-0044-05					
C154		CC45FSL1H221J	CERAMIC	L100		L40-2201-17					
C155		CK45FF1H103Z	CERAMIC	L101		L40-1091-17					
C156		CE04KW1V4R7M	ELECTRO	X1		L77-2002-05					
C157		CK45FB1H471K	CERAMIC	X2		L78-0244-05					
C158		CK45FB1H561K	CERAMIC	X100		L78-0244-05					
C159		CE04KW1H010M	ELECTRO	R1..2		L78-0244-05					
C160..161		CE04KW1V4R7M	ELECTRO	R2..5		RD					
C162		CE04KW1C331M	CERAMIC	R6..6		RD					
C163		CK45FF1H223Z	CERAMIC	R22..225		RD					
C164..165		CE04KW1V4R7M	ELECTRO	R27		RS14KB3D271J					
C166		CE04KW1C331M	ELECTRO	R28..4		RS14KB3D270J					
C167		CK45FF1H223Z	CERAMIC	R29..4		RS14KB3D271J					
C168..169		CK45FF1H103Z	CERAMIC	R30..7		RS14KB3D270J					
C170		CE04KW1V4R7M	ELECTRO	R32..6		RS14KB3D181J					
C171		CE04KW1C331M	ELECTRO	R33..0		RS14KB3D181J					
C172		CK45FF1H103Z	CERAMIC	R34..4		RD					
C173		CE04KW1V4R7M	ELECTRO	R34..5		RD					
C174		CK45FF1H223Z	CERAMIC	R34..6		RD					
C175		CK45FF1H1103Z	CERAMIC	R34..7		RD					
C176..177		CE04KW1C100M	ELECTRO	R34..8		RD					
C178		CE04KW1E471M	ELECTRO	R34..9		RD					
C179..180		CE04KW1V4R7M	ELECTRO	R34..10		RD					
C181..182		CE04KW1C470M	CERAMIC	S1..10		ROTARY ENCODER (VOLUME)					
C183		CE04KW1E471M	ELECTRO	S11..19		TACT SWITCH					
C184..190		CK45FF1H103Z	CERAMIC	S20..28		TACT SWITCH					
C191		CE04KW1H010M	ELECTRO	S29..33		TACT SWITCH					
C192..193		CE04KW1C101M	CERAMIC	S34..36		TACT SWITCH					
C194..196		CC45FSL1H101J	NP-ELEC	S35..35		PUSH SWITCH (POWER)					
C197		CE04HW1E100M									
C198..199		CK45FF1H103Z	CERAMIC								
C200..202		CE04KW1H010M	ELECTRO								
C203		CC45FSL1H05J	CERAMIC								
C204		CK45FF1H103Z	CERAMIC								
C205		CC45FSL1H470J	CERAMIC								
C206		C91-0769-05	CERAMIC								
TC1		C05-0097-05	TRIMMER CAPACITOR(30PF)								
CN1		E40-4796-05	PIN ASSY								
CN2		E40-4297-05	FLAT CABLE CONNECTOR (7P)								

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Ref. No	Addl. ref.	Parts No.	Description	Desti- nation	Re- marks
C135		CE04KW1C331M	ELECTRO CERAMIC	330UF	16WV
C136		CK45FF1H223Z	CERAMIC	0.022UF	Z
C137		CK45FB1H222K	CERAMIC	220PF	35WV
C138		CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C139-141		CC45FSL1H01J	CERAMIC	1.0UF	J
C142		CE04KW1V4R7M	ELECTRO	2.2UF	Z
C143		CF92FV1H105J	MF-C	0.022UF	Z
C145		CC45FSL1H220J	CERAMIC	22PF	J
C146		CC45FSL1H270J	CERAMIC	27PF	J
C148		CC45FCH1H050C	CERAMIC	5.0PF	C
C149		CC45FCH1H220J	CERAMIC	22PF	J
C150		CF92FV1H105J	MF-C	1.0UF	J
C151		CE04KW1HR2M	ELECTRO	2.2UF	Z
C152		CK45FF1H223Z	CERAMIC	0.022UF	Z
C153		CK45FB1H332K	CERAMIC	330PF	K
C154		CC45FSL1H221J	CERAMIC	220PF	J
C155		CK45FF1H103Z	CERAMIC	0.010UF	Z
C156		CE04KW1V4R7M	ELECTRO	4.7UF	K
C157		CK45FB1H471K	CERAMIC	4.7UF	K
C158		CK45FB1H561K	CERAMIC	560PF	K
C159		CE04KW1H010M	ELECTRO	1.0UF	50WV
C160..161		CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C162		CE04KW1C331M	CERAMIC	330UF	16WV
C163		CK45FF1H223Z	CERAMIC	0.022UF	Z
C164..165		CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C166		CE04KW1C331M	ELECTRO	330UF	16WV
C167		CK45FF1H223Z	CERAMIC	0.022UF	Z
C168..169		CK45FF1H103Z	CERAMIC	0.010UF	Z
C170		CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C171		CE04KW1C331M	ELECTRO	330UF	16WV
C172		CK45FF1H103Z	CERAMIC	0.010UF	Z
C173		CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C174		CK45FF1H223Z	CERAMIC	0.022UF	Z
C175		CK45FF1H1103Z	CERAMIC	0.010UF	Z
C176..177		CE04KW1C100M	ELECTRO	100UF	16WV
C178		CE04KW1E471M	ELECTRO	470UF	25WV
C179..180		CE04KW1V4R7M	ELECTRO	470UF	25WV
C181..182		CE04KW1C470M	CERAMIC	470UF	25WV
C183		CE04KW1E471M	ELECTRO	470UF	25WV
C184..190		CK45FF1H103Z	CERAMIC	0.010UF	Z
C191		CE04KW1H010M	ELECTRO	1.0UF	50WV
C192..193		CE04KW1C101M	CERAMIC	100UF	16WV
C194..196		CC45FSL1H101J	NP-ELEC	100PF	J
C197		CE04HW1E100M		100UF	J
C198..199		CK45FF1H103Z	CERAMIC	0.010UF	Z
C200..202		CE04KW1H010M	ELECTRO	1.0UF	50WV
C203		CC45FSL1H05J	CERAMIC	47PF	J
C204		CK45FF1H103Z	CERAMIC	47PF	J
C205		CC45FSL1H470J	CERAMIC	47PF	J
C206		C91-0769-05	CERAMIC	0.010UF	K
TC1		C05-0097-05	TRIMMER CAPACITOR(30PF)		
CN1		E40-4796-05	PIN ASSY	(30P)	
CN2		E40-4297-05	FLAT CABLE CONNECTOR (7P)		

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KR-V990D/V9080

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Ref. No.	Addl. ref.	Parts No.	Description	Desti- nation	Re- marks
D6.7		1SS131 HSS104A 1SS131 HSS104A 1SS131	DIODE DIODE DIODE DIODE DIODE	E	
D8		HSS104A 1SS131 HSS104A 1SS131	DIODE DIODE DIODE DIODE	E	
D9-14	D15-20	HSS104A 1SS131	DIODE DIODE	E	
D9-14	D15-20	HSS104A 1SS131	DIODE DIODE	E	
D21	D21	HSS104A 1SS131	DIODE DIODE	E	
D22	D22	HSS104A 1SS131	DIODE DIODE	E	
D100	D100	HZS5.6N(B2) RD5.6ES(B2) H2S5.1N(B2) RD5.1ES(B2)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE	E	
D101	D101	HZS5.6N(B2) RD5.6ES(B2) H2S5.1N(B2) RD5.1ES(B2)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE	E	
D102	D102	HZS5.6N(B2) RD5.6ES(B2) H2S5.1N(B2) RD5.1ES(B2)	ZENER DIODE ZENER DIODE ZENER DIODE ZENER DIODE	E	
D103	D103	HSS104A 1SS131	DIODE DIODE	E	
D104	D104	HSS104A 1SS131	DIODE DIODE	E	
D105,106	D105,106	HSS104A 1SS131	DIODE DIODE	E	
ED1		*	11-MT-103GK UPD16311	INDICATOR TUBE MOS-IC	
IC1					
IC2					
IC3					
IC4					
IC5					
IC100					
IC101					
IC102					
IC103					
IC104					
IC105,106					
IC107					
IC108					
IC109					
Q1-3	Q1-3				
Q4	Q4				
Q5-7	Q5-7				
Q100-102	Q100-102				
Q103-110	Q103-110				
Q111	Q111				
Q112	Q112				
Q113,114	Q113,114				
Q115	Q115				
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E : Europe
M : Other Areas
X : Australia
C : China
L : Scandinavia
Y : AA(EUROPE)
P : Canada
R : Mexico
G : Germany
E : Europe
M : Other Areas
X : Australia
C : China
△ indicates safety critical components

Ref. No.	Addl. ref.	Parts No.	Description	Parts No.	Ref. No.	Addl. ref.	New Part	Desti- nation	Re- marks
Q116,117		2SC2458(Y,GR)	TRANSISTOR	Q116,117	2SC2311(A,Q,R)			TRANSISTOR	
Q118		2SC3940(A,R,S)	TRANSISTOR	Q118	2SD863(E,F)			TRANSISTOR	
Q118	A1	*	ELECTRIC CIRCUIT MODULE	*	W02-2541-05				

L : Scandinavia
Y : AA(EUROPE)
P : Canada
R : Mexico
E : Europe
G : Germany
M : Other Areas
X : Australia
C : China
D : KR-V990D
9 : KR-V9080
K : USA
T : Europe
E : Europe
F : AA(EUROPE)
X : AA(EUROPE)
P : Canada
R : Mexico
G : Germany
E : Europe
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△ indicates safety critical components

KR-V990D/V9080

SPECIFICATIONS

For U.S.A. and Canada

Rated power output during STEREO operation

120 watts per channel minimum RMS, both channels driven, at 8 Ω from 20 Hz to 20 kHz with no more than 0.03 % total harmonic distortion. (FTC)

Rated power output during SURROUND operation

Front

105 watts per channel minimum RMS, both channels driven, at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Center

105 minimum RMS at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Rear

70 watts per channel minimum RMS, both channels driven, at 8 Ω, 1kHz with no more than 0.7 % total harmonic distortion.

Total harmonic distortion.....0.005%(1 kHz, 60W, 8Ω)

Frequency response

LINE(CD, AUX, TAPE).....10 Hz ~ 75 kHz, +0 dB, -3 dB

Signal to noise ratio (IHF'66)

PHONO (MM)75 dB

LINE (CD, AUX, TAPE)98 dB

Input sensitivity / impedance

PHONO (MM)2.5 mV / 47 kΩ

LINE (CD, AUX, TAPE)200 mV / 47 kΩ

Output level / impedance

TAPE REC200 mV / 2.2 kΩ

PRE OUT (SUBWOOFER)1V / 1 kΩ (KR-V9080)

PRE OUT (FRONT, CENTER, REAR, SUBWOOFER)

.....1V / 1kΩ (KR-V990D)

Tone Control

BASS±10 dB (at 100 Hz)

TREBLE±10 dB (at 10 kHz)

LOUDNESS control

VOLUME at -30 dB level+8 dB (at 100 Hz)

DIGITAL AUDIO section (KR-V990D)

Sampling frequency.....32 kHz, 44.1 kHz, 48 kHz

Input level / impedance

Coaxial (TV / CABLE).....0.5 Vp-p / 75 Ω

VIDEO section

TELEVISION format.....NTSC

VIDEO inputs / outputs

VIDEO (composite).....1 Vp-p / 75 Ω

S-VIDEO (luminance signal).....1 Vp-p / 75 Ω

(chrominance signal)0.286 Vp-p / 75 Ω

FM tuner section

Tuning frequency range87.5 MHz ~ 108 MHz

Usable sensitivity (MONO)

.....1.2μV (75 Ω) / 13.2 dBf (75 kHz DEV., S/N 30 dB)

50dB quieting sensitivity

STEREO32μV (75 Ω) / 41.2 dBf (75 kHz DEV.)

Total harmonic distortion (1 kHz)

MONO0.6 % (65.2 dBf input)

STEREO0.7 % (65.2 dBf input)

Signal to noise ratio (1 kHz, 75 kHz DEV.)

MONO75 dB (65.2 dBf input)

STEREO68 dB (65.2 dBf input)

Selectivity (±400 kHz)50 dB

Stereo separation (1 kHz)40 dB

Frequency response30 Hz ~ 15 kHz, +0.5 dB, -3.0 dB

AM tuner section

Tuning frequency range530 kHz ~ 1,700 kHz

Usable sensitivity (30% mod., S/N 20 dB)

.....16μV / (500 μV / m)

Total harmonic distortion0.7 %

Signal to noise ratio (30 % mod. 1mV input)45 dB

Selectivity30 dB

GENERAL

Power consumption5.2 A

AC outlet

SWITCHED2 (total 150 W, 1.2 A max.)

DimensionsW : 440 mm (17 - 5 / 16")

H : 162 mm (6-3 / 8")

D : 396 mm (15 - 9 / 16")

Weight (Net)12.8 kg (28.2 lb) KR-V9080

13.1 kg (28.9 lb) KR-V990D

Note : KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

KR-V990D/V9080

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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